

JAMES E. ETZEL, Ph. D. Special Consultant

Registered Engineers Class D Industrial Waste Class 3 Municipal Waste

April 30, 1980

320 NORTH McKINLEY, WARSAW, INDIANA 46580

Dalton Foundries, Inc. P.O. Box 1388 Warsaw, Indiana 46580

ATTENTION: Mr. John Canan

Gentlemen:

Following are the results of the leach test analyses which you requested: AFS AFS AFS EPA 12788 12789 12790 Sample No. 12791 Concrete Cor es Site Fill Site Fill Type Slag COD 54 36 87 *1 *] *1 Cyanide *0.5 *0.5 *0.5 *0.5 Lead *0.1 *0.1 *0.1 *0.1 Cadmium 1,0 *10 *10 *10 *10 Iron *1 Chromium 5.3 *1 *1 *] *0.5 *0.5 *0.5 *0.5 Copper 4 *0.1 Zinc *0.1 *O.l *0.5 Nickel *0.5 *0.5 *1 *0.1 *0.09 Phencl *0.01 *0.01 0.6 Cil & Grease Second Extraction

Second Extraction COD

Zinc

*1

1.1

* Indicates less than.

Values are given as mg/l.

Sample No. 12790 was tested according to the E.P.A. approved test procedure. The other samples were leached according to the A.F.S. procedure.

(cont.)

Prom DimvFCdoc # 2927/26/ Q927/26/ (pg 28 of 34) accersed 11/23/10 (sualsops 29-34, 600 ph

.

CLIENT SAMPLE ID:

CLIENT PROJECT: Waste Rust Preventative

11/7/97 Date Collected: 11/7/97 Date Received:

Report Date: EIS Sample No: 047042 EIS Order No: 971100073

| Parameter | | Results | Units | SDL | MDL | Analyst | Test | Method | 1 |
|------------------|----|---------|-------|-------|--------|---------|----------|--------|---|
| METALS . | | | | | | | | | |
| Antimony, Total | | 0.90 | mg/L | 0.1 | 0.05 | ClearN | 11/13/97 | 200.7 | |
| Arsenic, Total | ~ | 0.36 | mg/L | 0.1 | 0.05 | ClearN | 11/13/97 | 200.7 | |
| Beryllium, Total | | < 0.02 | mg/L | 0.02 | 0.01 | ClearN | 11/13/97 | 200.7 | |
| Cadmium, Total | | <0.02 | mg/L | 0.02 | 0.01 | ClearN | 11/13/97 | 200.7 | |
| Chromium, Total | | 0.32 | mg/L | 0.02 | 0.01 | ClearN | 11/13/97 | 200.7 | |
| Copper Total | | 1.51 | mg/L | 0.02 | 0.01 | ClearN | 11/13/97 | 200.7 | |
| Lead, Total | 81 | <0.1 | mg/L | 0.1 | 0.05 | ClearN | 11/13/97 | 200.7 | |
| Mercury, Total | | < 0.001 | mg/L | 0.001 | 0.0002 | ShaneD | 11/21/97 | 245.1 | |
| Nickel, Total | | 0.24 | mg/L | 0.02 | 0.01. | ClearN | 11/13/97 | 200.7 | |
| Selenium, Total | | 0.37 | mg/L | 0.1 | 0.05 | ClearN | 11/13/97 | 200.7 | |
| Silver, Total | 40 | <0.02 | mg/L | 0.02 | 0.01 - | ClearN | 11/13/97 | 200.7 | |
| Thallium, Total | | 0.58 | mg/L | 0.2 | 0.1 | ClearN | 11/13/97 | 200.7 | |
| Zinc, Total | | 0.74 | mg/L | 0.02 | 0.01 | ClearN | 11/13/97 | 200.7 | |
| | | | | | | | | | |

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | % Recovery USEPA EMSL | - Accuracy | % RSD Precision |
|----------------|---------------------------------------|--------------|--------------------|
| | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 83.7 | - | , |
| Barium * | 117.5 | | |
| Cadmium * | 111. | | |
| Chromium * | 110.8 | - | |
| Copper | 108,2 | | |
| Iron | 102.4 | | |
| Lead * | 120,2 | - | |
| Manganese | 100.6 | | |
| Mercury * | 116.7 | - | |
| Nickel | 109.2 | | |
| Selenium * | 103.5 | | |
| Silver * | 127. | - | : |
| Sodium | 94.8 | * | |
| Zinc | 103.4 | | |
| Chlorides | 102.5 | | 8.8 |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94,4 | | |
| Sulfate | 94,4 | | |
| Sulfide, Total | · · · · · · · · · · · · · · · · · · · | | |
| TDS | | | |
| TOC | | | |
| ТОН | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxicity | | | a Leaching M te Types Onl | |
|----------------|--------------|-----------|----------------------|------------------------------|------------|
| Parameter | RCRA | A | B | C | <u>D</u> |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 \ | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | - | 250. | 2500. | 6250. | ** |
| Copper | _ | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | ; | 1.4 | 14. | 35. | ** |
| Iron | - | 1.5 | 1 ,5 . | ** | ** |
| Manganese - | ~ | 0.05 | 0.5 | ** | ** |
| Nickel | - | 0.2 | 2. | 5. | ** |
| PCB | | _ | _ | - | , - |
| рн | | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | - | 0.3 | 3. | 7.5 | ** |
| Sodium | | 250. | 2500. | 6250. | ** |
| Sulfate | _ | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | _ | 5. | 12.5 | ** |
| TDS , | · . <u>-</u> | 500. | 5000. | 12500. | * ** |
| TOC | _ | | _ | **** | *** |
| тон | _ | <u>-</u> | | _ | _ |
| Zinc | _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} mosting is not warriwed

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

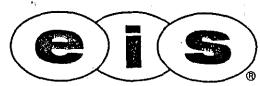
| DIC Joh Number | 70 | | | |
|---------------------------------------|-------------------|---------------|-------------|-----------|
| EIS Lab Number | 780F | | | |
| Client Description | NORTH SETTLING | | ·.] | |
| | TANK #153 | | į | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| % Solids | 75.1 | | | |
| Weight Raw Sample (g) | 107.5 | | | |
| Filters Used | APIS | | | |
| · | HAWP | | | |
| · | | | | |
| | | - | | |
| * * * * * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| | 9.0 | | | |
| Final Extract pH (24 hr) | 4.9 | | | <u> </u> |
| Acid Added (24hr)(ml) | 29.9 | | | , |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | | l | | <u></u> |
| Total Acid Added (ml) | 29,9 | | | |
| Total DI Water Added (ml) | 1585. | - | | |
| Original Liquid Phase(ml) | 23, | | | |
| Final Extract Volume (ml) | 1637.9 | | | |
| * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0,01 | | | |
| Barium (PPM) | <0.05 | | | |
| Cadmium (PPM) | ۷٥،٥١ | | | |
| Chromium (PPM) | 40.05 | | | |
| Lead (PPM) | <0.05 | | | |
| Mercury (PPM) | <0,002 | | | · |
| Selenium (PPM) | <0.005 | | | |
| Silver (PPM) | 20.05 | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | ·780F | | | - | | | | | | | | 1 | | | ; | | |
|---|-----------------------------------|----------------|-----|---------------|----------|---|---|---|---|---|---|---|---|---|---|----|-----|
| Client Description | NORTH SETTLING TANK' # 1.53 | | | | | | | | | | | - | | | | | |
| * * * * * * * * * * * | * * * * * * | * | * * | * | * | * | * | * | * | * | * | 7 | * | * | * | * | * 3 |
| Weigh Raw Sample (g) | 110.8 | | | | | | | | • | | | | | | | | - |
| Filters Used | AP 15 | | | | | _ | | | | | | _ | | | | | |
| | AP25 | | | | | | | | | | | _ | | | | | |
| | HAWP | | | | | | | | | | | _ | | | | | |
| | | | | | | | | | | | | | | | | | ٠ |
| DI Water Added (ml) | 22/6 | | | | | | • | | | | | | | | | | |
| * | * * * * * * | * | * * | * | * | * | * | * | * | * | * | * | * | * | * | * | * : |
| PARAMETERS | | | | | | | | | | | | _ | | | | | |
| Copper (ppm) | 0,12 | | | | | | | | | | | | | | | ٠. | |
| Iron (ppm) | 0.14 | <u> </u> - | | | | | | | _ | | | | | | | | |
| Manganese (ppm) | < 0.03 | | | | | | | | | | | | | | | • | |
| Nickel (ppm) | <0.05 | | | | | | | | | | | | | | | | |
| Sodium (ppm) | 22, | | | | <u>.</u> | | | | | | - | | | | | | |
| Zinc (ppm) | 0,06 | | | | T. | | | | | | | | | | | · | |
| Chlorides (ppm) | 8 | | | | | | | | | | | | | | | | |
| Cyanide, Total (ppm) | <0.005 | | | | | | | | | | | | | | | | |
| Fluoride (ppm) | 0.38 | | | | | | | | | | | | | | | | |
| PCB (ppm) | | | | | | | | | | | | | | | | | |
| Phenols (ppm) | 0.007 | | | | | | | | | | | | | | | | |
| Sulfate (ppm) | 8, | | | | | | | | | | | | | | | | |
| Sulfide, Total (ppm) | 2.2 | | | | | | | | | | | | | | | | |
| TDS (ppm) | 74. | | | | | | | | | | | | | | | | |
| TOC (ppm) | | | | | | | | | | | | | | | | | |
| TOH (ppm) | | | | | | | | | | | | | | | | | |
| ph after 24 hours | 8.6 | | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



EIS ENVIRONMENTAL ENGINEERS, INC.

1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description |
|--|-----------------------------|
| ATTN: J. R. Canan | EIS Analysis No.: 781F |
| Date Sampled: 2-28-86 Date Received: 3-3-86 Date Forwarded: 4-29-86 Purchase Order: 122 229 | South Settling Tank #154 |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | <u>X</u> | State of Indiana Leaching Method | X |
|------------------------|----------|----------------------------------|---|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate lata transfer errors.

Andris Rozite, Laboratory Director

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | % Recovery USEPA EMSL | - Accuracy | % RSD ' Precision |
|----------------|--------------------------|--------------|----------------------|
| Tarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 83.7 | _ | |
| Barium * | 117.5 | *** | |
| Cadmium * | 111. | - | |
| Chromium * | 110.8 | - | |
| Copper | 108,Z | | |
| Iron | 102.4 | | |
| Lead * | 120.2 | - | |
| Manganese | 100.6 | | |
| Mercury * | 116.7 | | |
| Nickel | 109.2 | | |
| Selenium * | 103,5 | | |
| Silver * | 127. | - | |
| Sodium | 94.8 | * | |
| Zinc | 103.4 | | |
| Chlorides | 102,5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94.4 | | |
| Sulfate | 94,4 | | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | · | | |
| ТОН | | | |

^{*} These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

| | EP Toxicity | | | a Leaching M te: Types: Onl | |
|----------------|--------------|-----------|--------|--------------------------------|--------|
| Parameter | RCRA | A | B B | C C | |
| Arsenic * | 5.0 | 0.05 | 0.5 | 11.,25 | 5.0 |
| Barium * | 100 | 1. | 10. | 2/5 | 1100 - |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0). 25 | 10 |
| Chromium * | 5.0 | 0.05 | 0.5 | I.25 | 550 |
| Lead * | 5.0 | 0.05 | 0.5 | 11.25 | 5;0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0). 0.5) | 01_2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 6) _* 2/5 | 11.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 125 | 5.0 |
| Chlorides | | 250. | 2500. | 6250 | ** |
| Copper | - | 0.25 | 2.5 | 6.25 | 米米 |
| Cyanide, Total | - | 0.2 | 2. | 5,₀ | ** |
| Fluoride | - | 1.4 | 14. | 35. | 米米 |
| Iron | · - | 1.5 | 15. | ** | 老米 |
| Manganese | - | 0.05 | 0.5 | 米火 : | 水水 |
| Nickel | · - | 0.2 | 2. | 55 | ** |
| РСВ | - | - | | - · | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 48 - 1111 | 大米 |
| Phenols | <u></u> | 0.3 | 3. | 7/5 | ** |
| Sodium | - | 250. | 2500. | 6250 | ** |
| Sulfate | - | 250. | 2500. | 6.250., | 杰米 |
| Sulfide, Total | - | | 5. | 1/2/5 | ** |
| TDS | - | 500. | 5000. | E2500. | ** |
| TOC | - | _ | - | - | - |
| гон | | - | - | - . | |
| Zinc | : | 2.5 | 25. | 62.5 | 法法 |

^{*} Limits shown are based on EP Toxicity Analysis Damta

^{**} Testing is not required

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

| th Hing Tank #154 * * * * 80.8 106.2 APIS HAWP * * * * 9.2 4.8 | * * * * * * | * * * * * * | * * * * * |
|--|--|--|--|
| * * * * 80.8 106.2 APIS HAWP * * * * 9.2 | | * * * * * * | * * * * * |
| 106.2 APIS HAWP * * * * | * * * * * | * * * * * * | * * * * * |
| APIS HAWP * * * * 9.2 | * * * * * * | * * * * * * | * * * * * |
| * * * * 9.2 | * * * * * | * * * * * * | * * * * * |
| * * * * | * * * * * | * * * * * * | * * * * * |
| 9,2 | * * * * * | * * * * * * | * * * * * |
| 9,2 | * * * * * * | * * * * <u>*</u> * * | * * * * * |
| 9,2 | | | |
| | | 1 | } |
| | . . | | |
| 13,4 | | | |
| - | *************************************** | | |
| | | | |
| 13,4 | | | |
| 1703. | a | | |
| 15. | | | |
| 1731,4 | | | |
| * * * * | * * * * * | * * * * * * | * * * * * |
| | | | |
| 40.01 | | | |
| 0.6 | | | |
| 20.01 | | | |
| <0.05 | | | |
| <0.05 | | | |
| <0.002 | | | |
| 0.005 | | | |
| .0.05 | | | * * * * * * |
| | 13,4 13,4 1703, 15, 1731,4 * * * * <0,01 <0,05 <0,05 <0,005 <0,005 | 13,4 13,4 1703, 15. 1731,4 * * * * * * * * * * * 40,01 0.6 20,01 <0,05 <0.05 <0.005 .0.005 | 13,4 - 13,4 1703, 15. 1731,4 * * * * * * * * * * * * * * * * * * * |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

LEACHING METHOD ANALYTICAL REFERENCES

__ACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST.

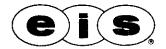
ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|----------------|------------------|------------------------------|
| Chlorides | On oto ricerou y | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| _ckel | 3010 / 7520 | • |
| PCB | 8080 | |
| Hq | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| ТОН | 9020 | |
| Zinc | 3010 / 7950 | , |

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 781F | | <u> </u> | | | | | | | | | ··· | | | | |
|---------------------------|-------------------------------|-----|----------|-----|-----|---|---|------------|---|---|---|-----|---|---|----|--------------|
| Client Description | South Settling , Tank #154 | | | | | | | | | | , | | • | · | | |
| * * * * * * * * * * | * * * * * * | * * | * 7 | * * | * | * | * | * | * | * | * | * | * | * | * | * * |
| Weigh Raw Sample (g) | 111.5 | | | | | | | | | | | | | | | • |
| Filters Used | AP15 | | | | _ | | | | | | | | | | | |
| | HAWP | | | | | | | | | | _ | | | | | |
| | | | | | | | | | | | | | | | | |
| DI Water Added (ml) | 2230 | | | | | , | • | | | | | | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * | * . | * * | * * | * | * | * | * | * | * | * | * | * | * | * * |
| PARAMETERS | | | | | | | | | | | | | | | | |
| Copper (ppm) | 0.06 | | | | | | | | | | | | | | ٠, | |
| Iron (ppm) | <0.10 | ļ | | | | | | | | | | | | _ | | |
| Manganese (ppm) | <0.03 | | | | | | | | | | | | | | | · |
| Nickel (ppm) | <0.05 | | | | | | | | | | | | | | | |
| Sodium (ppm) | 11. | | | • | | | | | | | | | | | | |
| Zinc (ppm) | <0.03 | | | | | | | | | | | | | | | |
| Chlorides (ppm) | 5 | | | | | | | | | | | | | | | |
| Cyanide, Total (ppm) | 40,005 | | | | | | | | • | | | | | • | | |
| Fluoride (ppm) | 0.24 | | | | | | | | | | | | | | | |
| PCB (ppm) | | | | | | | | | | | | | | | | |
| Phenols (ppm) | 0.005 | | | | | | | | | | | | | | | |
| Sulfate (ppm) | 8 | | | | - | | | | | | | | | | | |
| Sulfide, Total (ppm) | 1.4 | | | | | | | , | | | | | | | | |
| TDS (ppm) | 88 | | | | | | | | - | | | | | | | |
| TOC (ppm) | | | | | | | | | | | | | | | | |
| TOH (ppm) | | | | | | | | | | | | | | | | . |
| ph after 24 hours | 8.0 | | | | | | | · <u>.</u> | | | | | - | | | |

Note: The reverse side of this sheet lists reference methods utilized



WASTE CHARACTERIZATION ANALYSIS REPORT

| Client: The Dalton Foundries, Inc. P. O. Box 1388 | Sample Description |
|--|--|
| Warsaw, IN 46580 Attn: J. R. Canan | EIS Analysis No.: 3320H - 3330H |
| Date Sampled: | 3320H - #489 3326H - #495 3321H - #490 3327H - #496 |
| - | 3322н - #491 3328н - #497 |
| | 3324H - #493 3330H - #499 |
| Date Received: 07-11-88 | 3325H #494 |
| Date Forwarded: 11-08-88 | |
| Purchase Order: 140905 | EIS Project No: |

This report presents results of waste characterization through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, November 1986, 3rd Edition
- . "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- . State of Indiana "Leaching Methods"

The specific client requested analysis for the samples described above were the following:

| EP Toxicity-Metals | <u>√</u> . | TCLP-Metals | Ind Leaching | |
|------------------------|------------|--------------------|------------------|--|
| EP Toxicity-Pesticides | | TCLP-VOC (ZHE) | Total Metals | |
| EP Toxicity-Herbicides | | TCLP-Pesticides | | |
| Corrosivity | | TCLP-Herbicides | ADDITIONAL | |
| Reactivity (CN & S) | | TCLP-Base/Neutrals | | |
| Ignitability | | TCLP-Acid Fraction | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Characterization Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

Aski Rozite, Laboratory Director

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | % Recovery - USEPA EMSL | - Accuracy , | % RS Precis | |
|----------------|----------------------------|--------------|----------------|--------------------|
| Tarame ter | QC Sample | Matrix Spike | Analy | , |
| Arsenic * | 94.8 | - | 0 | (3323H) |
| Barium * | 103, 99.1, 100.7 | - | 0 | (3325H) (3327H) |
| Cadmium * | 112-8 | - | 0 | (33274) |
| Chromium * | 101.4, 96.9 | _ | 0 | (332SH) |
| Copper | 101.9, 102.9 | | 4.5 | (3327H) |
| Iron | 102, 101.8 | | 0 | (33274) |
| Lead * | 114, 31.5 | _ | 4.8 | (33274) |
| Manganese | 103.3,102.1 | | 0 | (33274) |
| Mercury * | 98, 96.5 | - | 0 | L3321H) |
| Nickel | 95.7, 98.4, 103.6 | | 0 | (3325H) (33274) |
| Selenium * | 89.8 | | 0 | (33234) |
| Silver * | 98.8, 97.6 | - | 0 | (33274) |
| Sodium | 102.9, 104.1 | | 0.5 | (3327 <i>H</i>) |
| Zinc | 99.2, 98.4 | | 0 | (3327H) |
| Chlorides | /02 | | 0 | (332 9 H) |
| Cyanide, Total | 35 | | 0 | (332911) |
| Fluoride | 1/3-2 | 101 (33214) | 4.9 | (3327#) |
| PCB | | | | |
| рН | | | 0 | (33244) |
| Phenols | 80.2 | | | |
| Sulfate | 98.2 | | 1./ | (332410) |
| Sulfide, Total | | | 5,2 | (33244) |
| TDS | | | 8.1 | (3328H) |
| TOC | | | | |
| TOH | | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxicity | | | na Leaching M Ste Types Onl | |
|----------------|-------------|-----------|--------|--------------------------------|------|
| Parameter | RCRA | <u> </u> | В | C | D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0, |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | - | 250. | 2500. | 6250. | ** |
| Copper | - | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | - | 2.4 | 24. | 60. | ** |
| Iron | - | 1.5 | 15. | ** | ** |
| Manganese | - | 0.05 | 0.5 | ** | ** |
| Nickel | - | 0.2 | 2. | 5. | ** |
| РСВ | - | - | _ | - | - |
| рH | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | - (| 0.3 | 3. | 7.5 | ** |
| Sodium | <u>~</u> | 250. | 2500. | 6250. | ** |
| Sulfate | - | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | 1. | 5. | 12.5 | ** |
| TDS | - | 500. | 5000. | 12500. | ** |
| TOC | - | - | - | _ | - |
| тон | - | - | _ | - | - |
| Zinc | _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

| EIS Lab Number | 3320 H | 3321H | 33224 | 3323H |
|---------------------------------|----------------------|----------------------|-------------|-----------|
| Client Description | #489 | ≠ 49 0 | #491 | #492 |
| Client Description | #1 dust | #2 Dust Collector | # 4 Dust | #6 Dust |
| | collector 5-16-98 | 5-16-88 | 5-16-88 | 5-16-99 |
| * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * | * * * * * |
| % Solids | 100 | 100 | 100 | 100 |
| Weight Raw Sample (g) | 100.1 | 100.1 | 100.4 | 100.5 |
| Filters Used | AP15 | AP15 | API5 | APIS |
| | HAWP | HANP | HANP | HANP |
| | | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9.6 | 9.0 | 8.0 | 8.6 |
| Final Extract pH (24 hr) | 4.8 | 7.3 | 7.3 | 7.3 |
| Acid Added (24hr)(ml) | 70.4 | 400.4 | 401.6 | 402. |
| Final Extract pH (28hr) | | | _ | |
| Acid Added (4hr)(ml) | | | | |
| Total Acid Added (ml) | 70.4 | 400.4 | 401.6 | 402. |
| Total DI Water Added (ml) | 1932 | 1602 | 1606 | 1608 |
| Original Liquid Phase(ml) | 0 | 0 | .0 | 0 |
| Final Extract Volume (ml) | 2002. | 2002. | 2008. | 2010. |
| * * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0.01 | <0.01 | <0.01 | <0.01 |
| Barium (PPM) | <0.5 | 0,7 | <0.5 | 0.6 |
| Cadmium (PPM) | <0.01 | < 0.01 | <0.01 | <0.01 |
| Chromium (PPM) | <0.05 | <0.05 | 0.09 | 0.08 |
| Lead (PPM) | 0.27 | < 0,0/ | 20.01 | <0.01 |
| Mercury (PPM) | 40.001 | <0.00/ | <0.001 | < 0.001 |
| Selenium (PPM) | < 0.005 | <0.005 | <0.005 | <0.005 |
| Silver (PPM) | <0.05 | <0.05 | <0.05 | <0.05 |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

ADDITIONAL TESTS PERFORMED ON EP TOXICITY EXTRACT

| EIS Lab Number | | 3320H | 3321H | 3322 H | 3323 H |
|-------------------|---------|--------------------------------|-----------------------------------|--|-----------------------------------|
| Client Descript | ion | #489 #1 DUST Collector 5-16-88 | #490 #2 Dust Collector 5-16-88 | #491 #4 DUST collector 5-16-88 | #492 #6 Dust collector 5-16-99 |
| * * * * * * * * * | * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Weigh Raw Sampl | Le (g) | | | | |
| Filters Used | | | | | |
| | | | | make, the second se | |
| | | | | | |
| DI Water Added | (m1) | | | | |
| * * * * * * * * | * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| PARAMETERS | | | | | |
| Copper | (ppm) | | | | |
| Iron | (ppm) | | | | |
| 1anganese | (ppm) | | | | |
| Nickel | (ppm) | <0.1 | <0./ | <0./ | 0./3 |
| Sodium | (ppm) | | | | |
| Zinc | (ppm) | | | | |
| Chlorides | (ppm) | | | | |
| Cyanide, Total | (ppm) | | | | |
| Fluoride | (ppm) | | | | |
| PCB | (ppm) | | | , | |
| Phenols | (ppm) | | | | |
| Sulfate | (ppm) | | | | |
| Sulfide, Total | (ppm) | | | | |
| TDS | (ppm) | | | | |
| TOC | (ppm) | | | | , |
| тон | (ppm) | | | | |
| ph after 24 hou | ırs | | | | |
| | | | | _ | |

Note: The reverse side of this sheet lists reference methods utilized

ANALYTICAL REPORT SHEET

STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 3320H | 3321H | 33224 | 3323 H |
|---------------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|------------------------------------|
| Client Description | #489-#1 Dust Cullector 5-16-88 | #490- #20UST Collector 5-16-85 | #491 - #4 Dust collector 5-16-88 | #492 -#6 Dust collector 5-16-88 |
| * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Weight Raw Sample (g) | 100.6 | 100.7 | 100 | 100.4 |
| Filters Used | AP15 | APIS | AP15 | API5 |
| | HAWP | HANP | HANP | HAWP |
| | | | | |
| DI Water Added (ml) | 2012 | 2014 | 2000 | 2008 |
| * * * * * * * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Copper (ppm) | 0.32 | 0.18 | 0,17 | 0.14 |
| Iron (ppm) | 0,28 | <0./ | <0.1 | <0,/ |
| Manganese (ppm) | 0.07 | <0.05 | < 0.05 | <0.05 |
| Nickel (ppm) | <0.1 | <0./ | <0.1 | <0.1 |
| Sodium (ppm) | //3, | 18. | 10. | 18. |
| Zinc (ppm) | 0.08 | <0.05 | 0,08 | <0.05 |
| Chlorides (ppm) | 23 | 8. | <0.8 | 1. |
| Cyanide, Total (ppm) | 0.02 | <0.005 | <0.005 | <0.005 |
| Fluoride (ppm) | 0.86 | 0.66 | 9.4 | 14.5 |
| PCB (ppm) | | | | |
| Phenols (ppm) | 0.05 | 0,/3 | 0.21 | 0.15 |
| Sulfate (ppm) | 127. | 12. | <5. | < <i>5.</i> |
| Sulfide, Total (ppm) | 0.3 | <0.2 | < 0.2 | <0.2 |
| TDS (ppm) | 374. | 74 | 36. | 52. |
| Barium (ppm) | <0.5 | 40.5 | <0.5 | <0.5 |
| Boron (ppm) | 0,2/ | 0.20 | <0,/ | ∠0./ |
| pH after 24 hours | 7.7 | 10.4 | 9.8 | 10.0 |

Note: The reverse side of this sheet lists reference methods utilized 2019 Revised (11-07-88)

LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST. The only deviation from the description is that NO PH adjustments were made.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|----------------|-----------------|------------------------------|
| Chlorides | BW 040 Heenou # | 325.3 |
| Copper | 3010 / 7210 | 343.3 |
| Cyanide, Total | 9010 | |
| Fluoride | 2010 | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| Nickel | 3010 / 7520 | 243.1 |
| , | 8080 | |
| PCB | 8080 | 150.1 |
| pH | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| ТОН | 9020 | |
| Zinc | 3010 / 7950 | |

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

| Client Description | #493 #9 Dust collector | #494 | #495 | |
|---------------------------|------------------------------|-------------------------|-------------|--------------------|
| <u>-</u> | #9 Dust | | , " | # 4 .96 |
| * * * * * * * * * * * * | | Core Sand, Composite | waste Sand | Slag |
| * * * * * * * * * * * * * | 5-16-88 | 7-7-88 | 7-7-98 | 5-18-99 |
| | * * * * * * | * * * * * | * * * * * * | * * * * * |
| % Solids | 100 | 100 | 100 | 100 |
| Weight Raw Sample (g) | 100.4 | 100.2 | 100.3 | 100.1 |
| Filters Used | AP15 | APIS | API5 | APIS |
| | HAND | HANP | HAMP | HAWP |
| | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9,5 | 6.2 | 8.5 | 10.5 |
| Final Extract pH (24 hr) | 5,0 | 5.1 | 5.3 | 6.7 |
| Acid Added (24hr)(ml) | 141.6 | 0.8 | 4,2 | 400.4 |
| Final Extract pH (28hr) | _ | - | 4.9 | _ |
| Acid Added (4hr)(ml) | _ | - | 7 | |
| Total Acid Added (ml) | 141.6 | 0.8 | 11.2 | 400.4 |
| Total DI Water Added (ml) | 1866 | 2003 | 1995 | 1602 |
| Original Liquid Phase(ml) | 0 | 0 | 0 | 0 |
| Final Extract Volume (ml) | 2008 | 2004. | 2006. | 2002. |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | 40.01 | <0.01 | <0.01 | <0.0/ |
| Barium (PPM) | 10,5 | <0.5 | <0.5 | 0.6 |
| Cadmium (PPM) | <0.01 | <0.01 | <0.01 | < 0.0/ |
| Chromium (PPM) | <0.05 | <0.05 | <0.05 | <0.05 |
| Lead (PPM) | 0.07 | <0.01 | < 0.01 | 0.01 |
| Mercury (PPM) | <0.001 | <0.001 | 20,001 | <0,001 |
| Selenium (PPM) | <0.005 | <0.005 | <0.005 | <0.005 |
| Silver (PPM) | <0,05 | <0.05 * * * * * | <0.05 | <0.05 * * * * * |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

ADDITIONAL TESTS PERFORMED ON EP TOXICITY EXTRACT

| EIS Lab Number | 3324H | 3325 H | 3326 H | 33274 |
|-----------------------|----------------------------------|---|-------------|-------------------------------------|
| Client Description | #493 #9 Dust . collector 5-16-88 | #494 Core Sand Composite 7-7-88 * * * * * * | Sand 7-7-38 | #496 Slag 5-18-88 * * * * * * |
| Weigh Raw Sample (g) | | | , | |
| Filters Used | | | | |
| | | 200,000 | | |
| | | | | |
| DI Water Added (ml) | | | | |
| * * * * * * * * * * * | * * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| PARAMETERS | | | | |
| Copper (ppm) | | | | |
| Iron (ppm) | | | | |
| Manganese (ppm) | | | | |
| Nickel (ppm) | 0.39 | <0,1 | <0./ | <0,/ |
| Sodium (ppm) | | | | |
| Zinc (ppm) | | | | |
| Chlorides (ppm) | | | | |
| Cyanide, Total (ppm) | | | | |
| Fluoride (ppm) | | | | |
| PCB (ppm) | | | | |
| Phenols (ppm) | | | | |
| Sulfate (ppm) | | | | |
| Sulfide, Total (ppm) | | | | |
| TDS (ppm) | | | | |
| FOC (ppm) | | | | |
| TOH (ppm) | | | | |
| ph after 24 hours | | | | |

Note: The reverse side of this sheet lists reference methods utilized

LEACHING METHOD ANALYTICAL REFERENCES

_ACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|----------------|-----------------|------------------------------|
| Chlorides | | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| .ckel | 3010 / 7520 | |
| РСВ | 8080 | |
| рН | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| тон | 9020 | |
| Zinc | 3010 / 7950 | • |

ANALYTICAL REPORT SHEET

STATE OF INDIANA - LEACHING METHOD ANALYSIS

| 25H 3326 H Fore Sand #495 - Waste 7-7-88 Sand 7-7-98 * * * * * * * * * * 0.9 100.6 P15 AP15 WP HAWP 018 2012 * * * * * * * * * * | 3327H #496- 5/a9 5-18-58 * * * * * * 100.3 AP15 HANP 2006 |
|---|---|
| * * * * * * * * * * * * * * * * * * * | 5-18-58 * * * * * * 100.3 AP15 HANP |
| 0.9 100.6 215 AP15 WP HAWP 018 2012 | 100.3 AP15 HANP |
| 015 AP15 WP HAWP 018 2012 | APIS HAWP |
| WP HAWP 018 2012 | HAWP |
| 018 2012 | |
| | 2006 |
| | 2006 |
| * * * * * * * * * | |
| | * * * * * * |
| 16 0.12 | 0.12 |
| 7 0.24 | <0,1 |
| < 0.05 | <0.05 |
| <0.1 | <0.1 |
| . 10. | 20. |
| 09 <0.05 | 10.05 |
| 4. | 41. |
| 0.006 | <0.005 |
| 2 0.34 | 1.4 |
| | |
| 5 0.19 | 0.06 |
| 8. | 37 |
| .2 <0.2 | <0.2 |
| . 56. | 186. |
| 5 <0.5 | <0.5 |
| / <0./ | <0./ |
| 5 7.8 | 10.8 |
| | 16 0.12 17 0.24 15 <0.05 1 <0.1 10. 10. 10. 10. 10. 10. 10. |

Note: The reverse side of this sheet lists reference methods utilized $^{2019}_{\mbox{Revised (11-07-88)}}$

LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST. The only deviation from the description is that NO PH adjustments were made.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|-----------------|------------------|------------------------------|
| Chlorides | on ordineering " | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| Nickel | 3010 / 7520 | |
| РСВ | 8080 | |
| рН | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| ТОН | 9020 | |
| Zinc | 3010 / 7950 | |

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

| EIS Lab Number | 3328H | 3329H | 33304 | |
|---|---|--|---|-----------|
| Client Description | # 497 Noth Settling Tank 4-13-88 | #498 East Settling Tank 4-13-88 | #499 South Settling Tank 4-13-85 | |
| * * * * * * * * * * * * * | | * * * * * * | * * * * * | * * * * * |
| % Solids | 89.4 | 70.2 | 100 | |
| Weight Raw Sample (g) | 100.7 | 102.6 | 100.1 | |
| Filters Used | | AP15 | AP15 | |
| | HAWP | HAWP | HAWP | |
| | - | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * | * * * * * |
| Initial Extract pH | 9.5 | 8.2 | 9.4 | |
| Final Extract pH (24 hr) | 5.0 | 5.2 | 4.9 | |
| Acid Added (24hr)(ml) | 70.2 | 4 8. | 20.4 | |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | _ | | | |
| Total Acid Added (ml) | 70.2 | 48. | 20.4 | |
| Total DI Water Added (ml) | 1731 | /392. | 1982 | |
| Original Liquid Phase(ml) | 4.5 | 28.5 | O | |
| Final Extract Volume (ml) | 1806. | 1468. | 2002. | |
| * | * * * * * * | * * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0.01 | <0.01 | <0.01 | |
| Barium (PPM) | 0.6 | <0.5 | <0,5 | |
| Cadmium (PPM) | <0.01 | 0.03 | <0.01 | |
| Chromium (PPM) | <0.05 | <0.05 | <0.05 | |
| Lead (PPM) | 0,01 | 0.02 | <0.0/ | |
| Mercury (PPM) | <0.001 | <0.001 | <0.001 | |
| Selenium (PPM) | < 0.005 | <0,005 | <0.005 | |
| | 1 | T | 1 | T |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

ADDITIONAL TESTS PERFORMED ON EP TOXICITY EXTRACT

| EIS Lab Number | 3328H | 3329H | 3330H | |
|---|-------------|---------------------------------------|--|-------------|
| Client Description | #497 North | #498 East Settling Tank 4-13-88 | #494 South Settling Tank 4-13-55 | |
| * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Weigh Raw Sample (g) | | | | |
| Filters Used | | | | |
| | | | | |
| | | | | |
| DI Water Added (ml) | | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| PARAMETERS | | | | |
| Copper (ppm) | | | | |
| Iron (ppm) | | | | |
| Manganese (ppm) | | | | |
| Nickel (ppm) | <0.1 | 0,10 | 40.1 | |
| Sodium (ppm) | | | | |
| Zinc (ppm) | | | | |
| Chlorides (ppm) | | | | |
| Cyanide, Total (ppm) | | | | |
| Fluoride (ppm) | | | | |
| PCB (ppm) | | | | · |
| Phenols (ppm) | | | | |
| Sulfate (ppm) | | | | |
| Sulfide, Total (ppm) | | | | |
| TDS (ppm) | | | | |
| TOC (ppm) | | | | |
| TOH (ppm) | | | | |
| ph after 24 hours | | | | |

Note: The reverse side of this sheet lists reference methods utilized

LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|----------------|-----------------|------------------------------|
| Chlorides | , | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| nganese | | 243.1 |
| Nickel | 3010 / 7520 | |
| PCB | 8080 | |
| рН | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | _ | 374.4 |
| Sulfide, Total | 9030 | 1 |
| TDS | · | 160.2 |
| TOC | 9060 | |
| тон | 9020 | |
| Zinc | 3010 / 7950 | |

ANALYTICAL REPORT SHEET

STATE OF INDIANA - LEACHING METHOD ANALYSIS

| · | | | | | |
|---------------------------------------|-------------------|-----------------------------|------------------------------------|------------------------------------|-------------|
| EIS Lab Number | | <i>3</i> 328 <i>H</i> | 3329H | 3330H | |
| Client Descript | lient Description | | #498 - E. Settling Tank 4-13-88 | #499 - S. Settling Tank 4-13-88 | |
| * * * * * * * * | * * * | Tank 4-13-88 * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Weight Raw Samp | le (g) | 106.6 | 100.1 | 101.2 | |
| Filters Used | | AP15 | AP15 | APIS | |
| | | HAWP | HAWP | HAWP | |
| | | | | | |
| DI Water Added | (ml) | 2/32 | 2002 | 2024 | |
| * * * * * * * * * * * * * * * * * * * | * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * * |
| Copper | (ppm) | 0,10 | 0,07 | 0.14 | |
| Iron | (ppm) | 0.16 | 0.21 | 0.12 | |
| Manganese | (ppm) | <0,05 | < 0.05 | <0.05 | |
| Nickel | (ppm) | <0./ | <0,1 | <0,/ | |
| Sodium | (ppm) | <i>34.</i> | 34. | 12. | |
| Zinc | (ppm) | <0.05 | <0.05 | <0.05 | |
| Chlorides | (ppm) | 13. | 16. | 7. | |
| Cyanide, Total | (ppm) | <0.005 | <0.005 | 0.006 | |
| Fluoride | (ppm) | 0.45 | 0.56 | 0.22 | |
| PCB | (ppm) | | | | |
| Phenols | (ppm) | 0.02. | 0.01 | <0.005 | |
| Sulfate | (ppm) | 5. | 29. | <i><5,</i> | |
| Sulfide, Total | (ppm) | <0.2 | 0.2 | <0.2 | |
| TDS | (ppm) | 87. | 110. | 42. | |
| Barium | (ppm) | <0.5 | <0.5 | <0,5 | |
| Boron | (ppm) | <0./ | 0./2 | <0,/ | |
| pH after 24 hou | ırs | 9, 2 | 8.2 | 7.4 | |
| | | | | | · |

Note: The reverse side of this sheet lists reference methods utilized 2019 Revised $^{(11-07-88)}$

LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST. The only deviation from the description is that NO PH adjustments were made.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|-----------------|--------------------|------------------------------|
| Chlorides | 311 010 11001100 1 | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| Nickel | 3010 / 7520 | |
| РСВ | 8080 | |
| рн | | 150.1 |
| Phenols | | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| тон | 9020 | |
| Zinc | 3010 / 7950 | |

FOUNDRY WASTE CLASSIFICATION

| `lient Sample Description | #489 #1 Dust Collector 5-16-88 | #490 #2 Dust Collectur 5-16-88 | #491 44 Dust Collector 5-16-88 | #492 #6 Dust Collector 5-16-88 |
|------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Waste Type Assigned | В | | B | B |
| Basis for Assignment | Pb, Ca, Mn | PH | Cr, pH Fluoride | Cr, pH Fluoride |

The State of Indiana has set forth catagories for classification of Foundry wastes into four (4) possible waste types. The classification is based on laboratory test results and the comparison of these results with maximum contaminant limits for each catagory. Foundry waste type limits are presented in the section of this report titled Regulatory Limits.

If EIS has assigned a waste type classification for samples identified above, the assignment was made on the following basis.

- Statistical calculations were used only if the test result (for any parameter) was within + 20% of the Regulatory Limit. If no parameter results were within this range, simple comparisons were made.
- · The parameter placing a waste into a certain Waste Type has been shown.
- · If statistical calculations were required, they were made as follows:
 - A single sample only was received for analysis. Statistical calculations were based on laboratory analytical precision data. The precision data used was either historical or specifically generated on that sample. In either case, the number of samples was considered to be two (2).
 - Multiple samples representing the same waste stream were received for analysis. Calculations were based on the values generated by all of the samples.

The equations used for the statistical calculations are presented on the reverse side of this report sheet. These equations were taken from SW-846.

| EQUATIONS | DEFINITIONS |
|--|---|
| $1. \overline{X} = \frac{\Sigma X}{n}$ | X = Parameter result |
| _ s | n = Number of results for a single parameter |
| $2. S\overline{X} = \frac{S}{\sqrt{n}}$ | \overline{X} = Arithmetic Average |
| 3. $CI = \overline{X} + t_{20} S \overline{X}$ | S = Standard Deviation of n-l |
| | $S\overline{X}$ = Standard error |
| 4. CI \$ RL | CI = Confidence Interval |
| | t. ₂₀ = Students "t" test values at a probability of 0.2 |
| | RL = Regulatory Limit |

Explanation

Once the CI has been calculated, it is compared to the RL. If the CI is less than the applicable RL value, the parameter under consideration can be placed into the category defined by the RL. If it is equal to or greater than the RL, the parameter must be placed into the next higher waste type category.

| Students "t" | Test Values |
|-------------------|-------------|
| $\underline{n-l}$ | t.20 |
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.440 |
| 7 | 1.415 |

Calculations

FOUNDRY WASTE CLASSIFICATION

| Client Sample Description | # 493 #9 Dust Collector 5-16-88 | #494 Core Sand 7-7-88 | # 495 Waste Sand 7-7-38 | #496 5/ag 5-18-88 |
|------------------------------|---------------------------------------|-----------------------------|-------------------------------|-------------------------|
| Waste Type Assigned | B | _ | Α | < |
| Basis for Assignment | P6 | phenol | | pH |

The State of Indiana has set forth catagories for classification of Foundry wastes into four (4) possible waste types. The classification is based on laboratory test results and the comparison of these results with maximum contaminant limits for each catagory. Foundry waste type limits are presented in the section of this report titled Regulatory Limits.

If EIS has assigned a waste type classification for samples identified above, the assignment was made on the following basis.

- Statistical calculations were used only if the test result (for any parameter) was within + 20% of the Regulatory Limit. If no parameter results were within this range, simple comparisons were made.
- · The parameter placing a waste into a certain Waste Type has been shown.
- · If statistical calculations were required, they were made as follows:
 - A single sample only was received for analysis. Statistical calculations were based on laboratory analytical precision data. The precision data used was either historical or specifically generated on that sample. In either case, the number of samples was considered to be two (2).
 - Multiple samples representing the same waste stream were received for analysis. Calculations were based on the values generated by all of the samples.

The equations used for the statistical calculations are presented on the reverse side of this report sheet. These equations were taken from SW-846.

| EQUATIONS | DEFINITIONS |
|--|--|
| 1. $\overline{X} = \frac{\Sigma X}{n}$ | X = Parameter result |
| S S | n = Number of results for a single parameter |
| $2. S\overline{X} = \frac{S}{\sqrt{n}}$ | \overline{X} = Arithmetic Average |
| 3. CI = \overline{X} + t. ₂₀ S \overline{X} | S = Standard Deviation of n-l |
| 4. CI ≶ RL | $S\overline{X}$ = Standard error |
| | CI = Confidence Interval |
| | t. ₂₀ = Students "t" test values at a probability of 0.2 |
| | RL = Regulatory Limit |

Explanation

Once the CI has been calculated, it is compared to the RL. If the CI is less than the applicable RL value, the parameter under consideration can be placed into the category defined by the RL. If it is equal to or greater than the RL, the parameter must be placed into the next higher waste type category.

| Students "t" | Test Values |
|--------------|-------------|
| <u>n-1</u> | <u>t.20</u> |
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.440 |
| 7 | 1.415 |

Calculations

FOUNDRY WASTE CLASSIFICATION

| Client Sample Description | #497 North Settling Tank 4-13-88 | # 498 East Settling Tank 4-13-84 | # 499 South Settling Tank 4-13-88 | |
|------------------------------|--|--|---|--|
| Waste Type Assigned | B | В | A | |
| Basis for Assignment | PH | Cd | | |

The State of Indiana has set forth catagories for classification of Foundry wastes into four (4) possible waste types. The classification is based on laboratory test results and the comparison of these results with maximum contaminant limits for each catagory. Foundry waste type limits are presented in the section of this report titled Regulatory Limits.

If EIS has assigned a waste type classification for samples identified above, the assignment was made on the following basis.

- Statistical calculations were used only if the test result (for any parameter) was within + 20% of the Regulatory Limit. If no parameter results were within this range, simple comparisons were made.
- · The parameter placing a waste into a certain Waste Type has been shown.
- · If statistical calculations were required, they were made as follows:
 - A single sample only was received for analysis. Statistical calculations were based on laboratory analytical precision data. The precision data used was either historical or specifically generated on that sample. In either case, the number of samples was considered to be two (2).
 - Multiple samples representing the same waste stream were received for analysis. Calculations were based on the values generated by all of the samples.

The equations used for the statistical calculations are presented on the reverse side of this report sheet. These equations were taken from SW-846.

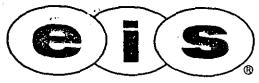
| EQUATIONS | DEFINITIONS | | |
|--|--|--|--|
| $1. \overline{X} = \frac{\Sigma X}{n}$ | X = Parameter result | | |
| S | n = Number of results for a single parameter | | |
| $2. S\overline{X} = \frac{S}{\sqrt{n}}$ | \overline{X} = Arithmetic Average | | |
| 3. CI = \overline{X} + t. ₂₀ S \overline{X} | S = Standard Deviation of n-1 | | |
| - | $S\overline{X}$ = Standard error | | |
| 4. CI \$ RL | CI = Confidence Interval | | |
| | t. ₂₀ = Students "t" test values at a probability of 0.2 | | |
| | RL = Regulatory Limit | | |

Explanation

Once the CI has been calculated, it is compared to the RL. If the CI is less than the applicable RL value, the parameter under consideration can be placed into the category defined by the RL. If it is equal to or greater than the RL, the parameter must be placed into the next higher waste type category.

| Students | "t" | Test Values | | |
|------------|-----|-------------|--|--|
| <u>n-1</u> | | t.20 | | |
| 1 | | 3.078 | | |
| 2 | | 1.886 | | |
| 3 | | 1.638 | | |
| 4 | | 1.533 | | |
| 5 | | 1.476 | | |
| 6 | | 1.440 | | |
| 7 | | 1.415 | | |

Calculations



EIS ENVIRONMENTAL ENGINEERS, INC.

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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description EIS Analysis No.: 769F | | |
|---|---|----------|--|
| ATTN: J. R. Canan Date Sampled: 2-24-86 Date Received: 3-3-86 Date Forwarded: 4-29-86 Purchase Order: 122 229 | #1 Collector #142 | V | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | <u>X</u> | State of Indian | na Leaching Method | <u> </u> |
|------------------------|----------|-----------------|--------------------|----------|
| EP Toxicity - Organics | | Volatile Organ | c Compounds | |
| Ignitability | | | Organic Compounds | |
| Corrosivity | | (Base/Neutrals | Acid Fraction) | |
| Reactivity | | PCB | Pesticides | |
| Additional | ~~~~ | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

Andris Rozite, Laboratory Director

| Parameter | . % Recovery USEPA EMSL | - Accuracy | % RSD ' Precision |
|----------------|----------------------------|--------------|----------------------|
| rarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 90.6 | - | |
| Barium * | 117.7 | - | _ |
| Cadmium * | 119,2 | • | |
| Chromium * | 105.6 | - | |
| Copper | 104.9 | | |
| Iron | . 105.5 | | |
| Lead * | 110.8 | - | · |
| Manganese | 105.4 | | |
| Mercury * | 101, | - | |
| Nickel | 105,7 | | |
| Selenium * | 107.8 | | |
| Silver * | 122.5 | - | : |
| Sodium | 94.6 | 294 | <u>.</u> |
| Zinc | 104.5 | | |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94.4 | | |
| Sulfate | 93,4 | | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| TOH | | | |

^{*} These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

| | EP Toxicity | | | a Leaching M te Types Onl | |
|----------------|----------------|-----------|---------|------------------------------|----------|
| Parameter | RCRA | <u>A</u> | B B | C C | <u>D</u> |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | | 250. | 2500. | 6250. | ** |
| Copper | _ | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | *** | 1.4 | 14. | 35. | ** |
| Iron | - | 1.5 | 15. | ** | ** |
| Manganese | . . | 0.05 | 0.5 | ** | ** |
| Nickel | , - | 0.2 | 2. | 5. | ** |
| PCB | - | - | _ | - | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | · | 0.3 | 3. | 7.5 | ** |
| Sodium | | 250. | 2500. | 6250. | ** |
| Sulfate | - | 250. | 2500. | 6250. | ** |
| Sulfide, Total | _ | - | 5. | 12.5 | ** |
| TDS | - | 500. | 5000. | 12500. | ** |
| TOC | - | | - | - | - |
| 20H | | - | | | _ |
| Zinc | _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

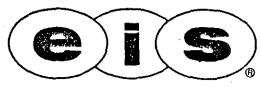
| * * * * * * * * * * * * * * * * * * * | 769F 1 Dust 100 107,3 AP15 HAWP | * * * * * : | * * * * * * | * * * * * |
|---|--|-------------|-------------|---------------------------------------|
| % Solids Weight Raw Sample (g) Filters Used | 100 107.3 AP15 | * * * * * | * * * * * | * * * * * |
| Weight Raw Sample (g) Filters Used | 107.3 AP15 | | | |
| Filters Used | AP15 | | | |
| | | | | · · · · · · · · · · · · · · · · · · · |
| | HAWP | | | |
| | | | | · · · · · · · · · · · · · · · · · · · |
| | | | | |
| * | * * * * * | * * * * * | * * * * * | * * * * * |
| Initial Extract pH | 10,0 | | | |
| Final Extract pH (24 hr) | 5.1 | | | |
| Acid Added (24hr) (ml) | 69.2 | | | • |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | | | | |
| Total Acid Added (ml) | 69.2 | | | |
| Total DI Water Added (ml) | 2077 | 4. | - | |
| Original Liquid Phase(ml) | . 0 | | | |
| Final Extract Volume (ml) | 2146,2 | | | |
| * | * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | 40.5 | | | _ |
| Cadmium (PPM) | < 0, 01 | | | |
| Chromium (PPM) | £0.05 | | | |
| Lead (PPM) | <0.05 | . * | | |
| Mercury (PPM) | <0,002 | | | |
| Selenium (PPM) | <0.005 | | | |
| Silver (PPM) * * * * * * * * * * * * * * | <0.05 | * * * * * | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 769F | | | | | | | | | | | | | | | |
|----------------------|---------------|-----|---|------------|-----|-----|---|---|---------|---|---------|------------------|---------|---|---|----------|
| Client Description | #1 Dust | | | | | | | | | | , | , ,,, | | | | |
| * * * * * * * * * | * * * * * * * | * * | * | * | * * | * | * | * | * | * | * | * | * | * | * | * * |
| Weigh Raw Sample (g) | 112.2 | | | | | | | | | | | | | | | |
| Filters Used | AP15 | | | | | | | | | | | | | | | |
| • | HAWP | ļ | | | | _ | | | | | 4 | | | | · | <u>.</u> |
| | | | | | | - | | | | | - | <u> </u> | | | • | |
| DI Water Added (ml) | 2224 | | | _ | | +- | | | | | 1 | | | | | |
| * * * * * * * * * * | | * * | * | * | * 1 | k * | * | * | * | * | \star | * | * | * | * | * * |
| PARAMETERS | | | | | | | | | | | | | | | | |
| Copper (ppm) | <0.05 | | | | | | | | | | | | | | | |
| Iron (ppm) | 0.32 | | | | | | | | | | | | | | | |
| Manganese (ppm) | 0.03 | | | | | | | | _ | | | | · | | | |
| Nickel (ppm | <0.05 | | | | | | | | | | | | | | | |
| Sodium (ppm | 162. | | | ; | _ | | | | | | | | | | | |
| Zinc (ppm | 0,33 | | | क्ष | | | | | | | | | | | | |
| Chlorides (ppm | 28. | | | | | | | | | | | | | | | |
| Cyanide, Total (ppm | 0.02 | | | | | | | | | | | | | | | |
| Fluoride (ppm | 0.95 | | | | | | | | <u></u> | | | | | | | |
| PCB (ppm | | | | | | | | | | | | | | | | |
| Phenols (ppm | 0.43 | | | · <u>-</u> | | | | | | | | | | | | |
| Sulfate (ppm | 125. | | | | | | | | | | | | | | | |
| Sulfide, Total (ppm | 1.4 | | | | | | | | | | | | | | | |
| TDS (ppm | 406, | | | | | | | | | | | | | | | |
| TOC (ppm | | | | | | | | | | | | _ | | | | |
| TOH (ppm | | | | | | | | | | | | | | | | |
| ph after 24 hours | 8.3 | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

The Dalton Foundries Sample Description Client: EIS Analysis No.: 770F J. R. Canan ATTN: #2 Collector 2-24-86 Date Sampled: 3-3-86 Date Received: #143 4-29-86 Date Forwarded: Purchase Order: 122 229

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Leaching Method <u>x</u> | |
|------------------------|---|---|--|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| Parameter | % Recovery USEPA EMSL | | % RSD Precision |
|----------------|--------------------------|----------------|--------------------|
| | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 90.6 | _ | |
| Barium * | 717.7 | - | 9.4 |
| Cadmium * | 119,2 | - | |
| Chromium * | 105.6 | - | |
| Copper | 104.9 | | |
| Iron | 105.5 | | |
| Lead * | 110,8 | · - | |
| Manganese | 105.4 | | |
| Mercury * | 101 | <u>-</u> | |
| Nickel | 105,7 | • | : |
| Selenium * | 107.8 | | |
| Silver * | 122,5 | - | |
| Sodium | 94.6 | * | |
| Zinc | 104.5 | _ | |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | : | | 0 |
| Phenols | 94.4 | | |
| Sulfate | 93.4 | | |
| Sulfide, Total | | | |
| TDS | ŕ | | 2,4 |
| TOC | · | | |
| ТОН | | | 1 to the |

^{*} These metals are analyzed by the Method of Standard Additions

| | | State | e of Indiana | | hod |
|----------------|------------|-----------|----------------|------------|--------------|
| Parameter EP | Toxicity (| A | Foundry Waste | Types Only | D : |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | i - | 250. | 2500. | 6250. | ** |
| Copper | . - | 0.25 | 2.5 | 6.25 | ** |
| lyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | - | 1.4 | 14. | 35. | ** |
| Iron | : - | 1.5 | 15. | * * | ** |
| Manganese | · - | 0.05 | 0.5 | * * | ** |
| Nickel | i | 0.2 | 2. | 5. | ** |
| РСВ | · · | - | - | - | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | · _ | 0.3 | 3. | 7.5 | ** |
| Sodium | . - | 250. | 2500. | 6250. | ** |
| Sulfate | _ | 250. | 2500. | 6250. | ** |
| Sulfide, Total | _ | | 5. | 12.5 | ** |
| TDS | _ | 500. | 5000. | 12500. | ** |
| TOC | | - , | . - | - | - |
| ТОН | _ | - , | _ | - | _ |
| Zinc | _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

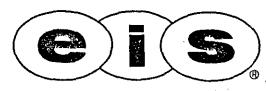
| EIS Lab Number | 770F | | | · |
|---|-----------------------|-------------|-------------|-----------------------|
| Client Description | #2 collector # 143 | | | |
| * * * * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| % Solids | 106 | | | |
| Weight Raw Sample (g) | 101.5 | | | |
| Filters Used | AP15 | | | |
| | HAWP | | | |
| | <u> </u> | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9,5 | | | |
| Final Extract pH (24 hr) | 7.3 | | | |
| Acid Added (24hr) (ml) | 406. | | | |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | | | | |
| Total Acid Added (ml) | 406, | | | |
| Total DI Water Added (ml) | 1624 | | | |
| Original Liquid Phase(ml) | | | | |
| Final Extract Volume (ml) | 2030. | , | . , , | |
| * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | . ,, - |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | 0.8 | | | |
| Cadmium (PPM) | < 0.01 | · | | |
| Chromium (PPM) | 0,05 | | | |
| Lead (PPM) | 0,05 | | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | <0.005 | | | |
| | | | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 770F | | | | | | | | | | | |
|-----------------------|------------------------|---------|--------------|----------|---------------------------------------|-------------|--------------|-------------|---|-------------|------|----------|
| Client Description | #2 collector , #143 | | | | | | | | | | | |
| * * * * * * * * * * | | * * * | * * * | * > | * * | * | * * | * | * | * | * 1 | * * |
| Weigh Raw Sample (g) | 112,2 | | | | ···· | | | <u> </u> | | | | |
| Filters Used | APIS | | | | | | | ļ. <u>.</u> | | | | |
| | HAWP | | | <u> </u> | | ··· | | <u> </u> | | | | |
| A. J. | | | · | | | | | | | | | |
| DI Water Added (ml) | 2244 | | | | | | | | | | ···• | |
| * * * * * * * * * * * | * * * * * * | * * * | * * * | * : | * * | * | * * | * * | * | * | * 1 | t * |
| PARAMETERS | | | | | ~ | | | <u> </u> | | | | |
| Copper (ppm) | 40.05 | | | | | | | | | | | |
| Iron (ppm) | 0.14 | | , | | | | | | | | | |
| Manganese (ppm) | 0.06 | | | | | | | | | | | |
| Nickel (ppm) | 0.06 | | | | | | | | | | | |
| Sodium (ppm) | 19. | | g* | | | | | | | | | |
| Zinc (ppm) | 0.08 | | † : | | | | | | | | | |
| Chlorides (ppm) | 3. | | | | | | | | | | | |
| Cyanide, Total (ppm) | <0.005 | | · | | · · · · · · · · · · · · · · · · · · · | | | | | | | |
| Fluoride (ppm) | 0.90 | | | | | | | | | | | |
| PCB (ppm) | | | | | | | | | | | | |
| Phenols (ppm) | 0.07 | | | | | | | | | | | <u>.</u> |
| Sulfate (ppm) | 13.2 | | | | | | | | | | | |
| Sulfide, Total (ppm) | 1.8 | | | | | | | | | | | |
| TDS (ppm) | 57 | | | | | | | | | | | |
| TOC (ppm) | | | | | | | - | | | | | |
| TOH (ppm) | | | | | | | | | | | | |
| ph after 24 hours | 10.2 | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description |
|--|------------------------|
| | EIS Analysis No.: 77lF |
| ATTN: J. R. Canan Date Sampled: 2-24-86 | #4 Collector |
| Date Received: 3-3-86 | #144 |
| Date Forwarded: 4-29-86 | • |
| Purchase Order: 122 229 | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Leaching Method | <u> X</u> |
|------------------------|---|----------------------------------|-----------|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | · | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| Parameter | % Recovery USEPA EMSL | - Accuracy | % RSD Precision |
|----------------|-----------------------|--------------|--------------------|
| | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 90.6 | - | · |
| Barium * | 117.7 | - | |
| Cadmium * | 119,2 | - | |
| Chromium * | 105.6 | - | |
| Copper | 104.9 | | |
| Iron | 105.5 | | · |
| Lead * | 110,8 | - | |
| Manganese | 105.4 | | |
| Mercury * | 101 | - | |
| Nickel | 105,7 | | ÷ |
| Selenium * | 107.8 | | |
| Silver * | 122,5 | - | |
| Sodium | 94.6 | * | |
| Zinc | 104.5 | | : |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рн | | | |
| Phenols | 94,4 | | |
| Sulfate | 93.4 | | |
| Sulfide, Total | | | |
| TDS | · | | |
| TOC | | | |
| ТОН | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxici | | State of Indiana Leaching Method Foundry Waste Types Only | | | | | |
|----------------|----------------|--------------|--|------------|------|--|--|--|
| Parameter | | A A | B B | C Types On | D D | | | |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | | | |
| Barium * | 100 | . ~ 1. | 10. | 25. | 100. | | | |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 | | | |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | | | |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | | | |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 | | | |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 | | | |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | | | |
| Chlorides | - | 250. | 2500. | 6250. | ** | | | |
| Copper | | 0.25 | 2.5 | 6.25 | ** | | | |
| Cyanide, Total | · _ | 0.2 | 2. | 5. | ** | | | |
| Fluoride | _ | 1.4 | 14. | 35. | ** | | | |
| Iron | : - | 1.5 | 15. | ** | ** | | | |
| Manganese | - · | 0.05 | 0.5 | ** | ** | | | |
| Nickel | ; <u> </u> | 0.2 | 2. | 5. | ** | | | |
| PCB | , - | - | - | - | _ | | | |
| рН | - | 6.0 - 9 | .0 5 - 10 | 4 - 11 | ** | | | |
| Phenols | · - | 0.3 | 3. | 7.5 | ** | | | |
| Sodium | | 250. | 2500. | 6250. | * * | | | |
| Sulfate | | 250. | 2500. | 6250. | ** | | | |
| Sulfide, Total | - | _ | 5. | 12.5 | ** | | | |
| TDS | - | 500. | 5000. | 12500. | ** | | | |
| TOC | — | - | - | _ | - | | | |
| тон | , - | - | — | - | - | | | |
| Zinc | | 2.5 | 25. | 62.5 | ** | | | |

^{*} Limits shown are based on EP Toxicity Analysis Data

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

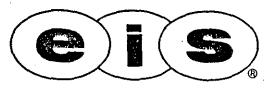
| EIS Lab Number | 771 <u>F</u> | | | |
|-----------------------------|--------------|-------------|-------------|-----------|
| Client Description | #4 Collector | | | |
| ; | #144 | , | | • |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 100.4 | | | |
| Filters Used | AP15 | | | |
| | HAWP | | | |
| · | · . | | | |
| * * * * * * * * * * * * * * | * * * * * * | * * * * * * | · * * * * * | * * * * * |
| Initial Extract pH | 6.5 | | | |
| Final Extract pH (24 hr) | 7.3 | 777 | | |
| Acid Added (24hr)(ml) | 401.6 | | | |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | | | | |
| Total Acid Added (ml) | 401.6 | | | |
| Total DI Water Added (ml) | 1606. | # (**) | | |
| Original Liquid Phase(ml) | 0 | | | |
| Final Extract Volume (ml) | .2007.6 | | | |
| * * * * * * * * * * * * * * | * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | <0.5 | | | |
| Cadmium (PPM) | 40,01 | · | | |
| Chromium (PPM) | 0.07 | | | |
| Lead (PPM) | 0.18 | | | |
| Mercury (PPM) | 40,002 | | | |
| Selenium (PPM) | <0.005 | | | |
| Silver (PPM) | 40.05 | | | T |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | | 7 | 71 | F | | | | | | | | | | | <u>-</u> - | | | | | | |] |
|--------------------|-----|----------|----------|------|---------|---|---|------|---|----------|--|-------------|---|---------|------------|---|----------|---|---|---|----------|-----------|
| Client Description | 1 7 | #4 0 | ollec | tor. | | | | | | | | · · · · · · | | | | - | , | | | | | 1 |
| * * * * * * * * | * * | * * | * * | * * | * | * | * | * | * | X | * | * | * | * | * | * | * | * | * | * | * : | ٤ |
| Weigh Raw Sample (| (g) | 1 | 12. | 7 | | | | | | | | - | | | | | | | | | _ | |
| Filters Used | | | AP I | | | | | | | | | | | | | | | | | | | \rfloor |
| | - | <i>}</i> | HAW | ρ | | | | | | \dashv | | | | | | | | | | | | - |
| | - | | | | <u></u> | | | | | - | <u>. </u> | | | | | _ | | | | | | 4 |
| DI Water Added (ml | _) | | 25 | | | | | | | | | | | | | | | | | | | |
| * * * * * * * * * | * * | * * | * * | * * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| PARAMETERS | | | | | | | | | | | | | | | | | | | | | | |
| Copper (pr | om) | ~ | 0.0 | 5 | | | | | | | | | | | | | | | | | <u>.</u> | |
| Iron (pr | om) | | 0.16 | > | | | | | | | | | | | | _ | <u> </u> | | | | | |
| Manganese (pr | om) | 4 | 0.03 | 3 | | | | _ | | | | | | | | | | | | | | |
| Nickel (pr | om) | < | 0.0 | 5 | | | | | | | | | | | | | | | | | | |
| Sodium (pr | om) | 3 | 2. | | | | | :_ | | | | | | | | | | | | | | |
| Zinc (pr | om) | | 0.4 | 2 | | | | শ্বী | | | | | | | | | | | | | | |
| Chlorides (pr | om) | | <u> </u> | | | | | | | | | | | | | | | | | | | |
| Cyanide, Total (pr | om) | < 0 | 0,00 | 05 | | | | | | | | | | | | | | | | | | |
| Fluoride (pr | om) | 23 | 3. | | | | | - | | | | | | | | _ | | | | • | | |
| PCB (pr | om) | | | | | | | | | | | | | | | | | | | | | |
| Phenols (pr | om) | (| ,4 | 9 | | | | | | | | | | | | | | | | | | |
| Sulfate (pr | om) | <. | 5. | | | | | | | | | | | | | | | | | | | |
| Sulfide, Total (pr | pm) | | 1.4 | | | | | | | | | | | | | | | | | | | |
| TDS (pr | pm) | //- | 4. | | | | | | | | | | | | | | | | | | | |
| TOC (PI | pm) | | | | | | | | | | | | | | | | | | | | | |
| тон (р | pm) | | | | | | | | | | | | | <u></u> | | • | | | | | | |
| ph after 24 hours | | | 9.4 | | | | | | | | | | | | | | | | | | | _ |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries ATTN: J. R. Canan | Sample Description EIS Analysis No.: 772F | |
|--|---|--|
| Date Sampled: 2-24-86 Date Received: 3-3-86 Date Forwarded: 4-29-86 Purchase Order: 122 229 | #6 Collector #145 | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | <u> </u> | State of Indiana Leaching Metho | d X |
|------------------------|----------|---------------------------------|-------------|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| Parameter | % Recovery USEPA EMSL | - Accuracy | % RSD ' Precision |
|----------------|--------------------------|--------------|----------------------|
| - Tarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 90.6 | _ | |
| Barium * | 117.7 | - | |
| Cadmium * | 119, 2. | - | |
| Chromium * | 105.6 | | |
| Copper | 104.9 | | |
| Iron | 105.5 | | |
| Lead * | 110,8 | - | |
| Manganese | 105.4 | | |
| Mercury * | 10/ | - | |
| Nickel | 105,7 | · | |
| Selenium * | 107.8 | | |
| Silver * | 122,5 | - | |
| Sodium | 94.6 | 294 | |
| Zinc | 104.5 | | · |
| Chlorides | 102.5 | | · |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | 5.4 |
| PCB | | | |
| рН | | | |
| Phenols | 94,4 | | |
| Sulfate | 93.4 | | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| ТОН | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| ED. | Toxic | | te of Indiana Foundry Wast | | |
|----------------|------------|---------|-------------------------------|--------|------|
| Parameter | RCRA | A | B B | C C | D D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | . i – | 250. | 2500. | 6250. | ** |
| Copper | · - | 0.25 | 2.5 | 6.25 | ** |
| :yanide, Total | · | 0.2 | 2. | 5., | ** |
| Fluoride | _ | 1.4 | 14. | 35. | ** |
| Iron | . - | 1.5 | 1,5 | ** | ** |
| Manganese | : | 0.05 | 0.5 | ** | ** |
| Nickel | | 0.2 | 2. | 5. | ** |
| PCB | | - | - | _ | - |
| рН | | 6.0 - 9 | 0 5 - 10 | 4 - 11 | ** |
| Phenols | - | 0.3 | 3. | 7.5 | ** |
| Sodium | ; - | 250. | 2500. | 6250. | ** |
| Sulfate | | 250. | 2500. | 6250. | ** |
| Sulfide, Total | _ | ••• | 5. | 12.5 | ** |
| TDS | | 500. | 5000. | 12500. | * * |
| TOC | _ | - | - | •• | - |
| ТОН | - | _ | | *** | - |
| Zinc | _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

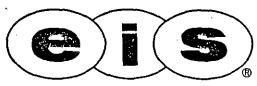
| EIS Lab Number | 772 F | | , | • |
|---|---------------|---|-------------|-----------|
| Client Description | #6 Collector | | | |
| | #145 | | | • |
| * * * * * * * * * * * * | * * * * * | * * * * * | * * * * * | * * * * * |
| % Solids | 100 | ·. | | |
| Weight Raw Sample (g) | 102.3 | | · | _ |
| Filters Used | AP15 | | | |
| | HAWP | | | |
| | | | | |
| * * * * * * * * * * * * * * | * * * * * * * | * * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 6.9 | | | |
| Final Extract pH (24 hr) | 7.2 | , , , , , , , , , , , , , , , , , , , |] | |
| Acid Added (24hr)(ml) | 409,2 | | | |
| Final Extract pH (28hr) | | · · · · · · · · · · · · · · · · · · · | | |
| Acid Added (4hr)(ml) | _ | | | |
| Total Acid Added (ml) | 409.2 | | | |
| Total DI Water Added (ml) | 1637 | * | | |
| Original Liquid Phase(ml) | 0 | | | |
| Final Extract Volume (ml) | 2046.2 | • • • • • • • • • | | |
| * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | , | |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | <0.5 | | | |
| Cadmium (PPM) | 40.01 | | | |
| Chromium (PPM) | 40.05 | | | |
| Lead (PPM) | 40.05 | | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | <0.005 | | | |
| | | | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 772 <i>F</i> | | | | | | | | | |
|-----------------------|----------------|-------|----------------|-----|-----|---------------|----------|---------|--------------|----------|
| Client Description | #6 Collector , | | | | | | | | | |
| * * * * * * * * * * * | * * * * * * | * * * | * * * | * * | * * | * * | * | * * | * * | * * |
| Weigh Raw Sample (g) | 110.6 | | | | | | | | | |
| Filters Used | AP15 | | | | | | | | | |
| | HAWP | | · | | | | <u> </u> | | | |
| | | | | | | . | | <u></u> | | |
| DI Water Added (ml) | 22/2 | | | | | | | | | · |
| * * * * * * * * * * | * * * * * * | * * * | * * * | * * | * * | * 7 | * * | * : | * * | * * |
| PARAMETERS | | | | | | | <u> </u> | | | |
| Copper (ppm) | <0.05 | | | | | | | | ·. | |
| Iron (ppm) | 0.10 | | | | | | | | | |
| Manganese (ppm) | 0.04 | | | | | | | | | |
| Nickel (ppm) | ∠0.05 | | | | | | | | | |
| Sodium (ppm) | 17. | | 24 | _ | | | | | | |
| Zinc (ppm) | 0.03 | | 7 9 | | | | | | | |
| Chlorides (ppm) | 1. | | | | | | | | | |
| Cyanide, Total (ppm) | <0.005 | | | | | | | | _ | <u>.</u> |
| Fluoride (ppm) | 7.8 | | | | | | | | | · |
| PCB (ppm) | | | | | | | | | | , |
| Phenols (ppm) | 0.26 | | | | | | | | , | |
| Sulfate (ppm) | < 5. | | | | | | | | | |
| Sulfide, Total (ppm) | 1.4 | | | _ | | | | | | |
| TDS (ppm) | 44. | | | | | | | | | |
| TOC (ppm) | | | | | | | | | | |
| TOH (ppm) | | | | | | | | | | |
| ph after 24 hours | 10,2 | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

Client: The Dalton Foundries

ATTN: J. R. Canan

Date Sampled: 2-24-86

Date Received: 3-3-86

Date Forwarded: 4-29-86

Purchase Order: 122 229

Sample Description

EIS Analysis No.: 773F

#9 Collector

#146

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | <u> X</u> | State of Indian | a Leaching Method | X |
|------------------------|-------------|-----------------------------------|---------------------------------|---|
| EP Toxicity - Organics | | Volatile Organi | c Compounds | |
| Ignitability | | Semi-volatile C (Base/Neutrals | rganic Compounds Acid Fraction) | |
| Corrosivity | | • | | |
| Reactivity | | PCB | Pesticides | |
| Additional | | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| Parameter | USEPA EMSL | - Accuracy | % RSD Precision |
|----------------|------------|--------------|--------------------|
| | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 90.6 | - | |
| Barium * | 117.7 | - | |
| Cadmium * | 119,2 | - | |
| Chromium * | 105.6 | - | |
| Copper | 104.9 | | |
| Iron | 105.5 | | |
| Lead * | 110.8 | - | |
| Manganese | 105.4 | | |
| Mercury * | 101 | - | . 0 |
| Nickel | 105.7 | | |
| Selenium * | 107.8 | | |
| Silver * | 122,5 | - | : |
| Sodium | 94.6 | . 24 | |
| Zinc | 104.5 | | |
| Chlorides | 102.5 | 124 | |
| Cyanide, Total | 99.3 | | 0 |
| Fluoride | 76.9 | | · |
| PCB | | | |
| рн | | | |
| Phenols | 94.4 | | |
| Sulfate | 93.4 | | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| ТОН | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| A. C. S. C. RP | Toxicity | | | Leaching Me | |
|----------------|----------------|--------------|--------|-------------|--------------|
| Parameter | RCRA | A | B | C C | D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. 0 | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | <u> -</u> | 250. | 2500. | 6250. | ** |
| Copper | . - | 0.25 | 2.5 | 6.25 | * * |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | · _ | 1.4 | 14. | 35. | ** |
| Iron | : - | 1.5 | 1,5 | ** | ** |
| Manganese | · - | 0.05 | 0.5 | ** | ** |
| Nickel | i <u>-</u> | 0.2 | 2. | 5. | ** |
| PCB | <u> </u> | - | •• | - | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | : - | 0.3 | 3. | 7.5 | ** |
| Sodium | | 250. | 2500. | 6250. | ** |
| Sulfate | - | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | - | 5. | 12.5 | ** |
| TDS | | 500. | 5000. | 12500. | ** |
| TOC | | - | - | - | |
| тон | | - | - | - | - |
| Zinc | <u>-</u> | 2.5 | 25. | 62.5 | , * * |

^{*} Limits shown are based on EP Toxicity Analysis Data

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

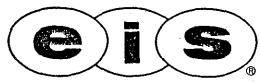
| EIS Lab Number | 773F | | | |
|---|--------------|-------------|-------------|-----------|
| Client Description | #9 Collector | | . , | |
| • | #146 | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 101.2. | | | |
| Filters Used | APIS | | | |
| | HAWP | i | | |
| | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9.6 | | | |
| Final Extract pH (24 hr) | 5.9 | | | |
| Acid Added (24hr) (ml) | 404.8 | | | |
| Final Extract pH (28hr) | _ | | | |
| Acid Added (4hr)(ml) | _ | | | |
| Total Acid Added (ml) | 404.8 | | | |
| Total DI Water Added (ml) | 1619. | 2019 | | |
| Original Liquid Phase(ml) | 0 | | | |
| Final Extract Volume (ml) | 2023.8 | | | |
| * | * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | 40.01 | | | |
| Barium (PPM) | 0.6 | | | |
| Cadmium (PPM) | 40,01 | | _ | |
| Chromium (PPM) | 0.09 | | | |
| Lead (PPM) | <0.05 | | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | <0.005 | | | |
| (== , | | | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | | | 77 | 73 <i>F</i> | <u> </u> | | | | | | \neg | | | | | | | | | | | | |
|-----------------|--------|-----|-------------|-------------|----------------|----------|---|---|----|---|--------|---|----|---|---|---|--------------------|---------|---|-------|--------------|---|---|
| Client Descript | ion | # 9 | CO! # 1. | lecte | , سره | | | | | | | | | | | | | , | | - 401 | | | |
| * * * * * * * | * * * | * | * * | * 1 | * * | * | * | * | * | * | * | * | * | * | * | * | $\overline{\star}$ | * | * | * | * | * | * |
| Weigh Raw Sampl | .e (g) | | 11. | 3.3 | | | | | | | | | | | | | | | | | | | |
| Filters Used | | | AF | 15 | | | | | | | | | | | | | | | | | | _ | |
| | | | HA | IWP | | | | | | | | | | | | | | | | | | | |
| | | | | | | ļ | | | - | | _ | | | | | | 4 | <u></u> | | | | | |
| DI Water Added | (ml) | | Z 2 | 11 | | - | | | | | _ | | | | | | _ | | | | ••• | | |
| * * * * * * * * | | * | | | * * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| PARAMETERS | | | | | | | | | | | | | | | | · | | | | | | | |
| Copper | (ppm) | | <0. | 05 | | | | | | | | | | | | | | | | | - | | |
| Iron | (ppm) | | 0. | 29 | | | | | | | | | | | | | | | | | | | |
| Manganese | (ppm) | - | < 0. | 63 | | | | | | | | | | | | | | | | | | | |
| Nickel | (ppm) | | ۷0، | 05 | | | | | | | | | | | | | | | | | | | |
| Sodium | (ppm) | | 20 | , | | | | | 1: | | | | ٠, | | | | | | | | | | |
| Zinc | (ppm) | | ٥٠ | 06 | | | | | J. | | | | | | | | | | | | | | |
| Chlorides | (ppm) | | 3, | | | | | | | | | | | | | | | | | | | | |
| Cyanide, Total | (ppm) | | 0. | 0/ | | | | | | | | | | | | | | | | | | | |
| Fluoride | (ppm) | | 0 | . 14 | | <u> </u> | | | | | | | | | | | | _ | | | | | |
| PCB | (ppm) | | | | | | | | | | | | | | | | | | | | | | |
| Phenols | (ppm) | | 0 | .07 | | | | | | | | | | | | | | | | | | · | |
| Sulfate | (ppm) | | <5 | | | | | | | | | | | | | | | | | | | | |
| Sulfide, Total | (ppm) | | 1 | . 2 | | | | | | | | | | | | | | | | | | | |
| TDS | (ppm) | | 52 | - | | | | | | | | | | | | | | | | | | | |
| TOC | (ppm) | | | | | | | | | | _ | | | | | | | | | | | | |
| тон | (ppm) | | | | | | | | | | | | | | | | | | | | | | |
| ph after 24 ho | ırs | | 8 | .8 | | | | | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description | |
|------------------------------|------------------------|-----|
| | EIS Analysis No.: 774F | -1. |
| ATTN: J. R. Canan | | |
| Date Sampled: 2-26-86 | | |
| Date Received: 3-3-86 | Shell Core | |
| Date Forwarded: 4-29-86 | #147 | |
| Purchase Order: 122 229 | | |
| • | | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | <u> </u> | State of Indiana Leaching M | ethod X |
|------------------------|----------|---|--------------|
| EP Toxicity - Organics | | Volatile Organic Compounds | <u></u> |
| Ignitability | | Semi-volatile Organic Compo (Base/Neutrals Acid Fracti | unds .on) |
| Corrosivity | | ,, | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate 'ata transfer errors.

| | | - Accuracy | % RSD | | | |
|----------------|-------------------------|--------------|--------------------|--|--|--|
| Parameter | USEPA EMSL QC Sample | Matrix Spike | Precision Analysis | | | |
| | QC Bampie | Hucela opine | - Indijois | | | |
| Arsenic * | 90.6 | - | | | | |
| Barium * | 117.7 | ••• | | | | |
| Cadmium * | 119, 2 | - | 0 | | | |
| Chromium * | 105.6 | - | | | | |
| Copper | 104.9 | | | | | |
| Iron | 105.5 | | | | | |
| Lead * | 110.8 | - | , | | | |
| Manganese | 105.4 | | | | | |
| Mercury * | 101 | | | | | |
| Nickel | 105.7 | | | | | |
| Selenium * | 107.8 | | | | | |
| Silver * | 122,5 | - | 0 | | | |
| Sodium | 94.6 | * | | | | |
| Zinc | 104.5 | | | | | |
| Chlorides | 102.5 | | | | | |
| Cyanide, Total | 99.3 | | | | | |
| Fluoride | 76.9 | | | | | |
| PCB | | | | | | |
| pН | | | | | | |
| Phenols | 94.4 | | | | | |
| Sulfate | 93.4 | | | | | |
| Sulfide, Total | | | | | | |
| TDS | · | | | | | |
| TOC | | | | | | |
| ТОН | | | | | | |

^{*} These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

| Parameter | D.C | | oundry Was | te Types Only | | |
|----------------|--------------------|-----------|------------|---------------|----------|----|
| Tarameter | RCRA | A | <u>B</u> | C | <u>D</u> | |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | |
| Barium * | 100 | 1. | 10. | 25. | 100. | |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 | ٠. |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 | |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 | |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 | |
| Chlorides | - · - · | 250. | 2500. | 6250. | ** | |
| Copper | _ | 0.25 | 2.5 | 6.25 | ** | |
| Cyanide, Total | - . | 0.2 | 2. | 5. | ** | |
| Fluoride | - | 1.4 | 14. | 35. | ** | ί, |
| Iron | - | 1.5 | 15. | ** | ** | |
| Manganese | , · · - | 0.05 | 0.5 | ** | ** | |
| Nickel | | 0.2 | 2. | 5. | ** | |
| PCB | - | - | - | - | - | |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** | ٠ |
| Phenols | - | 0.3 | 3. | 7.5 | ** | |
| Sodium | - | 250. | 2500. | 6250. | ** | |
| Sulfate | - | 250. | 2500. | 6250. | ** | |
| Sulfide, Total | - | - | 5. | 12.5 | ** | |
| TDS | | 500. | 5000. | 12500. | ** | |
| TOC | | - | - | - | _ | |
| тон | - | _ | _ | _ | _ | |
| Zinc | · | 2.5 | 25. | 62.5 | ** | |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

| EIS Lab Number | 774F | | | |
|---------------------------------------|-------------|-----------|-------------|-------------|
| Client Description | Shell Gre | | • . | |
| · · · · · · · · · · · · · · · · · · · | #147 | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 101.2 | | | |
| Filters Used | HAWP | | | |
| | | | | |
| | | | <u> </u> | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 6.2 | • | | |
| Final Extract pH (24 hr) | 5,0 | | | |
| Acid Added (24hr)(ml) | 2.8 | | | |
| Final Extract pH (28hr) | _ | | | |
| Acid Added (4hr)(ml) | - | | | |
| Total Acid Added (ml) | 2.8 | | | |
| Total DI Water Added (ml) | 2021. | * | | |
| Original Liquid Phase(ml) | . 0 | | | , |
| Final Extract Volume (ml) | .2023.8 | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * * |
| RCRA Metals | | | | <u> </u> |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | 40.5 | | | |
| Cadmium (PPM) | 20.01 | | | |
| Chromium (PPM) | <0.05 | | | |
| Lead (PPM) | 40.05 | , | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | 40.005 | | | |
| Silver (PPM) | <0.05 | | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

FOUNDRY WASTE CLASSIFICATION

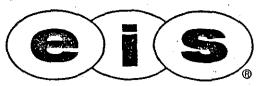
| Client Sample Description | Shell Core #147 | | | |
|------------------------------|--------------------|--|---|--|
| Waste Type Assigned | D | | | |
| Basis for Assignment | Phenol | | · | |

The State of Indiana has set forth catagories for classification of Foundry wastes into four (4) possible waste types. The classification is based on laboratory test results and the comparison of these results with maximum contaminant limits for each catagory. Foundry waste type limits are presented in the section of this report titled Regulatory Limits.

If EIS has assigned a waste type classification for samples identified above, the assignment was made on the following basis.

- Statistical calculations were used only if the test result (for any parameter) was within + 20% of the Regulatory Limit. If no parameter results were within this range, simple comparisons were made.
- · The parameter placing a waste into a certain Waste Type has been shown.
- · If statistical calculations were required, they were made as follows:
 - A single sample only was received for analysis. Statistical calculations were based on laboratory analytical precision data. The precision data used was either historical or specifically generated on that sample. In either case, the number of samples was considered to be two (2).
 - Multiple samples representing the same waste stream were received for analysis. Calculations were based on the values generated by all of the samples.

The equations used for the statistical calculations are presented on the reverse side of this report sheet. These equations were taken from SW-846.



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description |
|---------------------------------------|------------------------|
| | EIS Analysis No.: 775F |
| ATTN: J. R. Canan | |
| Date Sampled: 2-26-86 | |
| Date Received: 3-3-86 | ISOCURE CORE |
| Date Forwarded: 4-29-86 | #148 |
| Purchase Order: 122 229 | |
| · · · · · · · · · · · · · · · · · · · | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Leaching Method X |
|------------------------|---|------------------------------------|
| EP Toxicity - Organics | | Volatile Organic Compounds |
| Ignitability | | Semi-volatile Organic Compounds |
| Corrosivity | | (Base/Neutrals Acid Fraction) |
| Reactivity | | PCB Pesticides |
| Additional | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| | % Recovery | - Accuracy | % RSD |
|----------------|-------------------------|----------------|--------------------|
| Parameter | USEPA EMSL QC Sample | Matrix Spike | Precision Analysis |
| Arsenic * | 83.7 | | 0 |
| Barium * | 117,5 | - . | |
| Cadmium * | ///. | • | |
| Chromium * | 110.8 | - | |
| Copper | 108,2 | | |
| Iron | 102.4 | | |
| Lead * | 120.2 | - | |
| Manganese | 100.6 | | |
| Mercury * | 116.7 | - | |
| Nickel | 109,2 | | |
| Selenium * | 103.5 | | . 0 |
| Silver * | 127. | _ | |
| Sodium | 94.8 | * | |
| Zinc | 103,4 | | |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99,3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94.4 | | 12.7 |
| Sulfate | 94.4 | | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| TOH | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxicity | | | a Leaching l te Types On | |
|----------------|--------------|-----------|-------------|-----------------------------|------|
| Parameter | RCRA | A | B | C | D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | - | 250. | 2500. | 6250. | ** |
| Copper | - | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | - | 1.4 | 14. | 35. | ** |
| Iron | - | 1.5 | 15. | ** | ** |
| Manganese | wa | 0.05 | 0.5 | ** | ** |
| Nickel | · - | 0.2 | 2. | 5. | ** |
| PCB | | - | | - | - |
| рн | | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | _ | 0.3 | 3. | 7.5 | ** |
| Sodium | - | 250. | 2500. | 6250. | ** |
| Sulfate | _ | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | _ | 5. | 12.5 | ** |
| TDS | _ | 500. | 5000. | 12500. | ** |
| TOC | - | - | - | - | _ |
| TOH | - | <u></u> | - | - | _ |
| Zinc | | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

ANALYTICAL REPORT SHEET EP TOXICITY - METALS ANALYSIS

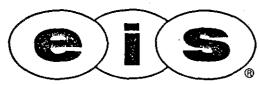
| EIS Lab Number | 775F | | , | |
|--------------------------|-----------------|-------------|-------------|-----------|
| Client Description | ISOCURE CORE | | | |
| | #148 | - | • | · |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 102.3 | | | |
| Filters Used | HAWP | | | |
| | | | | |
| | | | | |
| * * * * * * * * * * * * | * * * * * * * | * * * * * * | * * * * * | \ |
| Initial Extract pH | 6.4 | | | |
| Final Extract pH (24 hr) | 4.8 | <u> </u> | | |
| Acid Added (24hr) (ml) | 2.2 | | | |
| Final Extract pH (28hr) | _ | | | |
| Acid Added (4hr)(ml) | - | | | |
| Total Acid Added (ml) | 2.2 | | | |
| Total DI Water Added (m) | .) 2044, | : ** | | |
| Original Liquid Phase(ml | L) 0 | | | |
| Final Extract Volume (m) | | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | 40.01 | | | |
| Barium (PPM) | <0,5 | | | |
| Cadmium (PPM) | 20.01 | | | |
| Chromium (PPM) | <0.05 | | | |
| Lead (PPM) | <0.05 | | | |
| Mercury (PPM) | <0.002 | | · | |
| Selenium (PPM) | 40.005 | | | |
| | | | | |

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 775F | | • | | | | | | | | | | | - | | | | |
|-------------------------|-----------------------|-----|-----|----|----------|---|----------|-----|---|---|------|---|------|---|---|----|----|---|
| Client Description | ISOCURE CORE, #148 | | | | | | | ••• | | | | | • | | | | | |
| * * * * * * * * * * * | * * * * * * | * * | * * | * | * | * | * | * | * | * | * | ⇉ | * | * | * | * | * | * |
| Weigh Raw Sample (g) | 111.5 | | | , | | | | | | | | | | | | | | ļ |
| Filters Used | HAWP | | | · | | | | | | | | | | | | | | |
| · | | | | | | | <u> </u> | | | | | | | | | | | |
| | | | | | | | | | | _ | | | | | | | | |
| DI Water Added (ml) | 2230 | | | | | | , | • | | | | | | | | - | | |
| * * * * * * * * * * * * | * * * * * * | * 7 | * * | * | * * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| PARAMETERS | | | | | | | | | | | | | | | | | | |
| Copper (ppm) | 0.07 | | | | | | | | | | | | | | | ٠. | | |
| Iron (ppm) | 0.13 | | | | | | | | | | | | | | | | | |
| Manganese (ppm) | < 0.03 | | | | | | | | | | | | | | | | | |
| Nickel (ppm) | <0.05 | | | • | | | | | | | | | | | | | | |
| Sodium (ppm) | < 1. | | | | 2 | | | | | | | | | | | | | |
| Zinc (ppm) | 0.05 | | | | Ą. | | | | | | ···· | | | | | | | |
| Chlorides (ppm) | 1. | | | | | | | | | | | | | | | | | |
| Cyanide, Total (ppm) | <0.005 | | | | <u> </u> | | | | | | | | | | | | | |
| Fluoride (ppm) | ≺ 0, <i>l</i> | | - | | | | | | | | | | | | | | | |
| PCB (ppm) | | | | ., | | | | | | | | | | | | | | |
| Phenols (ppm) | 2,23 | | | | | | | | | | | | | | | | | |
| Sulfate (ppm) | < <u>5</u> , | | | | | | | | | | | | | | | | | |
| Sulfide, Total (ppm) | 1.8 | | | | | | | | | | | | | | | | | |
| TDS (ppm) | 20. | | | | | | | | | | | | | | | | | |
| TOC (ppm) | | | | | | | | | | | | | | | | | | |
| TOH (ppm) | | | | | | | | | | | | | | | | | -: | |
| ph after 24 hours | 6.3 | | | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description | | | | |
|------------------------------|--------------------------------------|--|--|--|--|
| | EIS Analysis No.: 776F | | | | |
| ATTN: J. R. Canan | | | | | |
| Date Sampled: 2-26-86 | | | | | |
| Date Received: 3-3-86 | SO ₂ Core | | | | |
| Date Forwarded: 4-29-86 | #149 | | | | |
| Purchase Order: 122 229 | ** · · · · · · · · · · · · · · · · · | | | | |
| | | | | | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indian | a Leaching Method | X |
|------------------------|---------------------------------------|-----------------|-------------------|---|
| EP Toxicity - Organics | | Volatile Organi | .c Compounds | |
| Ignitability | | Semi-volatile (| Organic Compounds | |
| Corrosivity | · · · · · · · · · · · · · · · · · · · | (Base/Neutrals | Acid Fraction) | |
| Reactivity | | PCB | Pesticides | |
| Additional | | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

| | . % Recovery | % RSD | | | | | |
|----------------|--------------|--------------|-----------|--|--|--|--|
| Parameter | USEPA EMSL | Matrix Crite | Precision | | | | |
| | QC Sample | Matrix Spike | Analysis | | | | |
| Arsenic * | 83.7 | · - | | | | | |
| Barium * | 117.5 | - | 0 | | | | |
| Cadmium * | 111. | _ | | | | | |
| Chromium * | 110.8 | • | | | | | |
| Copper | 108,2 | | | | | | |
| Iron | 102.4 | | | | | | |
| Lead * | 120,2 | - | | | | | |
| Manganese | 100.6 | | | | | | |
| Mercury * | 116,7 | _ | | | | | |
| Nickel | 109, 2 | | : | | | | |
| Selenium * | 103,5 | | | | | | |
| Silver * | 127. | - | | | | | |
| Sodium | 94.8 | * | | | | | |
| Zinc | 103.4 | | | | | | |
| Chlorides | 102,5 | | | | | | |
| Cyanide, Total | 99.3 | | | | | | |
| Fluoride | 76.9 | | | | | | |
| PCB | | | | | | | |
| рн | | | | | | | |
| Phenols | 94.4 | | | | | | |
| Sulfate | 94.4 | | | | | | |
| Sulfide, Total | | · | | | | | |
| TDS | | | | | | | |
| TOC | | | | | | | |
| TOH | | | | | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | | Ng. | | | |
|----------------|------------------|----------------|---------------------------|--------|----------|
| 14 | EP Toxicity | | of Indiana oundry Wast | | |
| Parameter | RCRA | A | B | C | <u>D</u> |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | - | 250. | 2500. | 6250. | ** |
| Copper | , - | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| fluoride | - | 1.4 | 14. | 35. | ** |
| Iron | - | 1.5 | 1,5. | ** | ** |
| Manganese | , ; - | 0.05 | 0.5 | ** | ** |
| Nickel | - | 0.2 | 2. | 5. | ** |
| PCB | - | - . | - | - | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | - | 0.3 | 3. | 7.5 | ** |
| Sodium | - | 250. | 2500. | 6250. | ** |
| Sulfate | - | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | _ | 5. | 12.5 | ** |
| TDS | - | 500. | 5000. | 12500. | ** |
| TOC | - | _ | - | - | - |
| ТОН | - | ~ | - | - | - |
| Zinc | | 2.5 | 25. | 62.5 | ** |

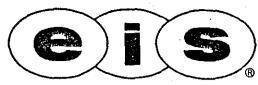
^{*} Limits shown are based on EP Toxicity Analysis Data Testing is not required

| EIS Lab Number | 776F | | | |
|---------------------------------|-------------|-------------|-------------|-----------|
| Client Description | SO2 CORE | | | |
| | #149 | | | • |
| * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 100.5 | | | |
| Filters Used | HAWP | | | |
| , | | | | |
| | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| Initial Extract pH | 6.4 | | | _ |
| Final Extract pH (24 hr) | 4.9 | | | |
| Acid Added (24hr)(ml) | 1 | | | |
| Final Extract pH (28hr) | - | | | |
| Acid Added (4hr)(ml) | _ | | | |
| Total Acid Added (ml) | 1 | | | |
| Total DI Water Added (ml) | 2009 | M | | |
| Original Liquid Phase(ml) | .0. | | | , . , . |
| Final Extract Volume (ml) | 2010 | · | | |
| * * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | , |
| Arsenic (PPM) | < 0.01 | | | |
| Barium (PPM) | <0.5 | | | |
| Cadmium (PPM) | <0.01 | | | |
| Chromium (PPM) | 40.05 | | | |
| Lead (PPM) | 20.05 | | | |
| Mercury (PPM) | 40,002 | | | |
| Selenium (PPM) | 40,005 | | | |
| Silver (PPM) | 40.05 | 1 | | 1 |

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 776F | | | | |
|-------------------------|--------------------|---------------------------------------|---------|---------|-------------|
| Client Description | 502 Core , #149 | | | | 1 |
| * * * * * * * * * * * | * * * * * * | * * * * * | * * * * | * * * * | * * * * * * |
| Weigh Raw Sample (g) | 111.2 | | | | |
| Filters Used | HAWP | | _ | · | |
| | | · · · · · · · · · · · · · · · · · · · | | | |
| | | , , , , , , , , , , , , , , , , , , , | | | |
| DI Water Added (ml) | 2224 | <u></u> | | ÷ | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * | * * * * | * * * * * * |
| PARAMETERS | | | ·. | : | |
| Copper (ppm) | 0.04 | | | | · - |
| Iron (ppm) | 0.14 | | | , | |
| Manganese (ppm) | <0.03 | | | | |
| Nickel (ppm) | 0.09 | | | | |
| Sodium (ppm) | <1. | | | | |
| Zinc (ppm) | 0.03 | 1 | 9 | | |
| Chlorides (ppm) | <1. | | | | |
| Cyanide, Total (ppm) | <0,005 | | | | |
| Fluoride (ppm) | ۷٥،۱ | | | | |
| PCB (ppm) | | | | | |
| Phenols (ppm) | 1.51 | | | | |
| Sulfate (ppm) | < 5 | | | | |
| Sulfide, Total (ppm) | 1.6 | | | | |
| TDS (ppm) | 14. | | | | |
| TOC (ppm) | | | | | |
| TOH (ppm) | | | | | |
| ph after 24 hours | 6,2 | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foun | dries Sample Description |
|-------------------------|--------------------------|
| | EIS Analysis No.: 777F |
| ATTN: J. R. Canan | |
| Date Sampled: 2-24-8 | 5 |
| Date Received: 3-3-86 | Waste Sand |
| Date Forwarded: 4-29-8 | 6 |
| Purchase Order: 122 22 |) |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Leaching Method | X |
|------------------------|-------------|----------------------------------|---|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate ata transfer errors.

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | % Recovery USEPA EMSL | - Accuracy | % RSD ' Precision |
|----------------|--------------------------|--------------|----------------------|
| Tarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 83,7 | | |
| Barium * | 117.5 | - | |
| Cadmium * | 111. | - | |
| Chromium * | 110.8 | | |
| Copper | 108,2 | | |
| Iron | 102,4 | | |
| Lead * | /20.2 | • | |
| Manganese | 100.6 | | , |
| Mercury * | 116.7 | - | |
| Nickel | 109,2 | | |
| Selenium * | 103,5 | | |
| Silver * | 127, | - | |
| Sodium | 94.8 | 49 | |
| Zinc | 103.4 | | |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94.4 | | |
| Sulfate | 93.4 | . 60 | |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| тон | | | |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxicity | | | a Leaching M te Types Onl | |
|----------------|-------------|-----------|--------|------------------------------|------|
| Parameter | RCRA | A | B B | CC | D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | | 250. | 2500. | 6250. | * * |
| Copper | _ | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | _ | 1.4 | 14. | 35. | ** |
| Iron | | 1.5 | 15. | ** | ** |
| Manganese | | 0.05 | 0.5 | ** | ** |
| Nickel | • | 0.2 | 2. | 5. | ** |
| PCB | - | - | - | _ | - |
| рН | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | - | 0.3 | 3. | 7.5 | ** |
| Sodium | - | 250. | 2500. | 6250. | ** |
| Sulfate | | 250. | 2500. | 6250. | ** |
| Sulfide, Total | - | - | 5. | 12.5 | ** |
| TDS | - | 500. | 5000. | 12500. | ** |
| TOC | | <u></u> | | . - | _ |
| .'OH | - | | _ | - | _ |
| Zinc | | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

| EIS Lab Number | 777F | | , | - |
|---|--------------------|-------------|-------------|---------------------------------------|
| Client Description | Waste Sand #150 | | | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| % Solids | 100 | | | |
| Weight Raw Sample (g) | 102.4 | | | |
| Filters Used | APIS | | | · · · · · · · · · · · · · · · · · · · |
| | AP25 | | | |
| | HAWP | | | |
| * * * * * * * * * * * * * * * | * * * * * * | * * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9.8 | | | |
| Final Extract pH (24 hr) | 5.0 | | | |
| Acid Added (24hr)(ml) | 22,6 | | | |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | | | | |
| Total Acid Added (ml) | 22.6 | | | |
| Total DI Water Added (ml) | 2025, | * | | |
| Original Liquid Phase(ml) | 0.0 | | | |
| Final Extract Volume (ml) | 2047.6 | • | | |
| * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | 40.01 | | | <u></u> |
| Barium (PPM) | 0.7 | | | |
| Cadmium (PPM) | 40.01 | | | |
| Chromium (PPM) | 0.05 | | | |
| Lead (PPM) | 40.05 | | | |
| Mercury (PPM) | 20.002 | | | |
| Selenium (PPM) | <0.005 | | | |
| | <0.05 | 1 | | |

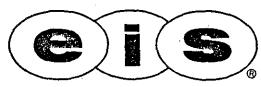
LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST. The only deviation from the description is that NO PH adjustments were made.

ANALYTICAL METHODS

| PARAMETER | SW-846 Method # | EPA 600/4-79-020 Method # |
|----------------|-----------------|------------------------------|
| Chlorides | | 325.3 |
| Copper | 3010 / 7210 | |
| Cyanide, Total | 9010 | |
| Fluoride | | 340.2 |
| Iron | | 236.1 |
| Manganese | | 243.1 |
| Nickel | 3010 / 7520 | |
| PCB | 8080 | |
| рН | | 150.1 |
| Phenols | • | 420.2 |
| Sodium | | 273.1 |
| Sulfate | | 374.4 |
| Sulfide, Total | 9030 | |
| TDS | | 160.2 |
| TOC | 9060 | |
| TOH | 9020 | |
| Zinc | 3010 / 7950 | |



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description |
|------------------------------|------------------------|
| ATTN: J. R. Canan | EIS Analysis No.: 778F |
| Date Sampled: 2-27-86 | Slag |
| Date Received: 3-3-86 | #151 |
| Date Forwarded: 4-29-86 | |
| Purchase Order: 122 229 | |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Leaching Method X | ۲ |
|------------------------|---|------------------------------------|---|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate lata transfer errors.

| | | Toxicity | | of Indiana | | |
|------------------|---------|----------------|-----------|------------------|-------------|------|
| <u>Parameter</u> | <u></u> | RCRA | A | oundry Wast B | e Types on. | D |
| Arsenic * | | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | | 0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | | . | 250. | 2500. | 6250. | ** |
| Copper | | *** | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | | · _ | 0.2 | 2. | 5. | ** |
| Fluoride | | - . | 1.4 | 14. | 35. | ** |
| Iron | | <u>·</u> | 1.5 | 15. | * * | ** |
| Manganese | | ••• | 0.05 | 0.5 | ** | ** |
| Nickel | | - | 0.2 | 2. | 5. | ** |
| PCB | | - | - | - | <u>-</u> | - |
| рН | | - | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | | - | 0.3 | 3. | 7.5 | ** |
| Sodium | | - | 250. | 2500. | 6250. | ** |
| Sulfate | | 500 | 250. | 2500. | 6250. | ** |
| Sulfide, Total | | - | _ | 5. | 12.5 | * * |
| TDS | | - | 500. | 5000. | 12500. | * * |
| TOC | | - | - | - | _ | _ |
| JOH | | - | - | _ | • | |
| Zinc | | . _ | 2.5 | 25. | 62.5 | ** |

^{*} Limits shown are based on EP Toxicity Analysis Data

^{**} Testing is not required

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | . % Recovery USEPA EMSL | - Accuracy | % RSD Precision |
|----------------|----------------------------|--------------|--------------------|
| rarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 83.7 | | |
| Barium * | 117.5 | | |
| Cadmium * | 111. | - | |
| Chromium * | 110.8 | - | 0 |
| Copper | /08.2 | | |
| Iron | 102.4 | | |
| Lead * | 120,2 | ••• | |
| Manganese | 100.6 | | |
| Mercury * | 116.7 | _ | |
| Nickel | 109,2 | | |
| Selenium * | 103.5 | | |
| Silver * | 127. | _ | |
| Sodium | 94.8 | ** | |
| Zinc | 103.4 | | |
| Chlorides | 102.5 | | |
| Cyanide, Total | 99,3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | · | |
| Phenols | 94,4 | | |
| Sulfate | 93.4 | | 2.3 |
| Sulfide, Total | | | |
| TDS | | | |
| TOC | | | |
| ТОН | | | ÷ |

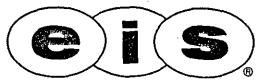
^{*} These metals are analyzed by the Method of Standard Additions

| EIS Lab Number | 778F | | | |
|---------------------------|---------------------------------------|-------------|--------------|---------------|
| Client Description | | | | ; |
| | 51ag #151 | | | . · } |
| * * * * * * * * * * * * * | * * * * * | * * * * * * | * * * * * * | * * * * * |
| % Solids | 100 | · . | | |
| Weight Raw Sample (g) | 104,1 | | | |
| Filters Used | HAWP | | | |
| | | | | |
| | · · · · · · · · · · · · · · · · · · · | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| Initial Extract pH | 9.8 | | | _ |
| Final Extract pH (24 hr) | 6.1 | | | |
| Acid Added (24hr)(ml) | 336.4 | - | | |
| Final Extract pH (28hr) | 5,6 | | | |
| Acid Added (4hr)(ml) | 80. | | | |
| Total Acid Added (ml) | 416.4 | | | |
| Total DI Water Added (ml) | 1616 | * | | |
| Original Liquid Phase(ml) | 0 | | | |
| Final Extract Volume (ml) | 2032.4 | • | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * * | * * * * * |
| RCRA Metals | | | | |
| Arsenic (PPM) | <0.01 | | | |
| Barium (PPM) | 0.8 | | | |
| Cadmium (PPM) | <0,01 | | | |
| Chromium (PPM) | 0.09 | | | |
| Lead (PPM) | 0.16 | | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | 40,005 | | | |
| Silver (PPM) | 40.05 | | | 1 |

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | | 77, | 8 F | | | | | | | | | | | T | <u>-</u> - | | | | | 7 |
|-----------------|---------|-------------|------------|---|---|------------|---|----------|--------------|---|---|---------|----|---|------------|-------|-------|-------------|---|---|
| Client Descript | ion | 5/ag | | 1 | | | | | | | | | | 1 | | | | | | |
| * * * * * * * * | * * * | * * * | * * * | * | * | * | * | * 7 | * * | * | * | * | * | 土 | * | * | * | * | * | × |
| Weigh Raw Sampl | Le (g) | 11 | 1.0 | | | | | | | | | | | | | | | | | |
| Filters Used | | H | AWP | | | | | | | | | | | 1 | | | | | | 4 |
| | : | | | - | | | | | - | | | | | + | | | | | | - |
| | | | <u></u> _ | - | | ·········· | | <u>.</u> | | | | ···-··· | ** | + | ~ | | | · · · · · · | | 1 |
| DI Water Added | (ml) | 22 | 20 | | - | | | | | ` | | | | | | | | | | |
| * * * * * * * * | * * * * | * * * | * * * | * | * | * | * | * | * * | * | * | * | * | * | * | * | * | * | * | * |
| PARAMETERS | | L | | | | | | | | - | | | | | | | | | | |
| Copper | (ppm) | 0. | 09 | | | | | | | | | | | | | | | ٠, | | |
| Iron | (ppm) | 0. | 13 | | | | | | | | | | | | | | | | | |
| Manganese | (ppm) | ۷٥, | <i>o</i> 3 | | | | | | | | | | | | | | | | | |
| Nickel | (ppm) | 0. | 06 | | | | | | | | | | | | | | | | | |
| Sodium | (ppm) | 4, | | | | | ; | ·- | | | | | • | | | | | , | | |
| Zinc | (ppm) | 0, | 09 | | | | | ři: | | | | | | | | | | | | |
| Chlorides | (ppm) | 6. | · . | | | | | | | | | | | | | | | | | |
| Cyanide, Total | (ppm) | ≺ 0, | 005 | | | | | _ | | | | | • | | | | | | | |
| Fluoride | (ppm) | 0. | 32 | | | | | | | | | | | | | | | | | |
| РСВ | (ppm) | | | | | | | | | | | | | | | | | | | |
| Phenols | (ppm) | <0. | .005 | | | | | | | | | | | | | | | | | |
| Sulfate | (ppm) | 18 | | | | | | | | | | | | | | | | | | |
| Sulfide, Total | (ppm) | 2 | .4 | | | | | | | | | | | | | | | | | |
| TDS | (ppm) | 70 | • | | | | | | | | | | | | | | | | | |
| TOC | (ppm) | | | | | | | | | | | | - | | | | | | | |
| ТОН | (ppm) | | | | | | | | | | | | | | | · · · | ····· | | | |
| ph after 24 hor | urs | 10 | 7.3 | | | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



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WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foun | dries Sample Description |
|-------------------------|--------------------------|
| | EIS Analysis No.: 779F |
| ATTN: J. R. Canan | |
| Date Sampled: 2-28- | 86 Real Cathline Bank |
| Date Received: 3-3-8 | East Settling Tank |
| Date Forwarded: 4-29- | 86 #152 ` |
| Purchase Order: 122 2 | 29 |

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

| EP Toxicity - Metals | X | State of Indiana Lea | aching Method X |
|------------------------|----------|----------------------|-----------------|
| EP Toxicity - Organics | <u> </u> | Volatile Organic Cor | mpounds |
| Ignitability | | Semi-volatile Organ: | ic Compounds |
| Corrosivity . | | (Base/Neutrals Acid | l Fraction) |
| Reactivity | | PCB Pest: | icides |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

QUALITY ASSURANCE DATA EP TOXICITY and/or LEACHING METHOD

| Parameter | . % Recovery USEPA EMSL | - Accuracy | % RSD ' Precision |
|----------------|----------------------------|--------------|---|
| rarameter | QC Sample | Matrix Spike | Analysis |
| Arsenic * | 83.7 | _ | |
| Barium * | 117.5 | - | |
| Cadmium * | 111. | - | |
| Chromium * | 110.8 | - | |
| Copper | 108,2 | | 0 |
| Iron | 102.4 | | 0 |
| Lead * | /20,2 | - | |
| Manganese | 100.6 | | 20.2 |
| Mercury * | 116.7 | - : | |
| Nickel | 109.2 | | . 0 |
| Selenium * | 103,5 | | |
| Silver * | 127. | - | |
| Sodium | 94.8 | ** | 0 |
| Zinc | 103.4 | | 70.7 |
| Chlorides | 102,5 | | |
| Cyanide, Total | 99.3 | | |
| Fluoride | 76.9 | | |
| PCB | | | |
| рН | | | |
| Phenols | 94,4 | | |
| Sulfate | 94,4 | | |
| Sulfide, Total | | | . 15.7 |
| TDS | | | |
| TOC | | | |
| ТОН | | | *************************************** |

^{*} These metals are analyzed by the Method of Standard Additions

| | EP Toxicity | | | a Leaching M te Types Onl | |
|----------------|-------------------------------|-----------|--------------|------------------------------|------|
| Parameter | RCRA | A | B | C | D |
| Arsenic * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Barium * | 100 | 1. | 10. | 25. | 100. |
| Cadmium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Chromium * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Lead * | | 0.05 | 0.5 | 1.25 | 5.0 |
| Mercury * | .0.2 | 0.002 | 0.02 | 0.05 | 0.2 |
| Selenium * | 1.0 | 0.01 | 0.1 | 0.25 | 1.0 |
| Silver * | 5.0 | 0.05 | 0.5 | 1.25 | 5.0 |
| Chlorides | an magaza m aran m | -250 | 2500. | 6250. | ** |
| Copper | · - | 0.25 | 2.5 | 6.25 | ** |
| Cyanide, Total | - | 0.2 | 2. | 5. | ** |
| Fluoride | ; <u>-</u> | 1.4 | 14. | 35. | ** |
| Iron | - | 1.5 | <u>1,</u> 5. | ** | ** |
| Manganese | - | 0.05 | 0.5 | ** | ** |
| Nickel | # | 0.2 | 2. | 5. | ** |
| PCB | - | - | _ | - | · . |
| рН | *** | 6.0 - 9.0 | 5 - 10 | 4 - 11 | ** |
| Phenols | | 0.3 | 3. | 7.5 | ** |
| Sodium | · | 250. | 2500. | 6250. | ** |
| Sulfate | - | 250. | 2500. | 6250. | ** |
| Sulfide, Total | •• | - | 5. | 12.5 | ** |
| TDS | - | 500. | 5000. | 12500. | ** |
| TOC | _ | - | - | - | |
| тон | . | - | - | | _ |
| Zinc | _ | 2.5 | 25. | 62.5 | * * |

^{*} Limits shown are based on EP Toxicity Analysis Data

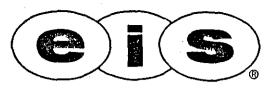
** machine in make ...

| EIS Lab Number | 779F | | | |
|---------------------------------|----------------------|-------------|-------------|--|
| Client Description | East Setting Tank | | • | |
| | #152 | | • | |
| * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| % Solids | 70.0 | | | |
| Weight Raw Sample (g) | 119,8 | | | |
| Filters Used | AP15 | | | |
| | HAWP | · | | |
| | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * * * * * | · * * * * * | * * * * |
| Initial Extract pH | 7,3 | | | |
| Final Extract pH (24 hr) | 4.9 | | | |
| Acid Added (24hr) (ml) | 30.7 | | | |
| Final Extract pH (28hr) | | | | |
| Acid Added (4hr)(ml) | _ | | | |
| Total Acid Added (ml) | <i>3</i> 0.7 | | | |
| Total DI Water Added (ml) | 1648, | * | | |
| Original Liquid Phase(ml) | 31. | | | |
| Final Extract Volume (ml) | 1709.7 | | | |
| * * * * * * * * * * * * * * * * | * * * * * * | * * * * * | * * * * * | * * * * * |
| RCRA Metals | | | | , |
| Arsenic (PPM) | <0.0/ | | | |
| Barium (PPM) | 0.6 | | | <u>. </u> |
| Cadmium (PPM) | 0.02 | | _ | |
| Chromium (PPM) | <0.05 | | | |
| Lead (PPM) | <0.05 | | | |
| Mercury (PPM) | <0.002 | | | |
| Selenium (PPM) | <0,00S | | | |
| Silver (PPM) | <0.05 | | | |

ANALYTICAL REPORT SHEET STATE OF INDIANA - LEACHING METHOD ANALYSIS

| EIS Lab Number | 779 <i>F</i> | | | •• | | | | | · | | | | | | | | 7 |
|---------------------------|---|-----|-----|-----------|---|----|---|---|---|---|--------|---|---|---|------------|---|---|
| Client Description | East Settling , Tank #152 * * * * * * | | | | | | | | | | \ \ | | | | | | |
| * * * * * * * * * * * | * * * * * * | * * | * ; | * * | * | * | * | * | * | * | * | * | * | * | * | * | × |
| Weigh Raw Sample (g) | 121.4 | | | | | | | | | | | | | | | | |
| Filters Used | AP15 | i | | | | | | | | | | | | | | | ╛ |
| | APZS | | | | | | | | | | | | | | | | |
| | HAWP | | | <u> </u> | | | | | | | _ | | | | | | |
| | | | | • | | | | | | | | | | | | | |
| DI Water Added (ml) | 2428 | | | | | , | | | | | | | | | | | |
| * * * * * * * * * * * * * | * * * * * * | * * | * : | * * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| PARAMETERS | | | | | | | | | | | _ | | | | ·········· | | |
| Copper (ppm) | 0.08 | | | | | | | | | | | | | | ٠. | | |
| Iron (ppm) | <0.10 | | | | | l. | | | | | | | | | | | |
| Manganese (ppm) | 0.04 | | | | | | | | | | | | | | | | |
| Nickel (ppm) | <0.05 | | | | | | | | | | | | | | | | |
| Sodium (ppm) | 23. | | | <i>(*</i> | | | | | | | | | | | | | |
| Zinc (ppm) | <0.03 | | | , st. | | | | | | | | | | | | ï | |
| Chlorides (ppm) | 8 | | | | | | | | | | | | | | | | |
| Cyanide, Total (ppm) | 0,007 | | | | | | | | | | | | | | | | |
| Fluoride (ppm) | 0.50 | | | · -· | | | | · | | | | | | | | | |
| PCB (ppm) | | | | | | | | | | | | | | | | | |
| Phenols (ppm) | 0.009 | | | | | | | | | | | | | | | | |
| Sulfate (ppm) | 22. | | | | | | | | | | | | | | | | |
| Sulfide, Total (ppm) | 1.8 | | | | | | | | | | | | | | | | |
| TDS (ppm) | 94 | | | | | | | | | | | | | | | | _ |
| TOC (ppm) | | | | | | | | | | | | | | | | | |
| TOH (ppm) | | | | | | | | | | | | | | | | | |
| ph after 24 hours | 7.0 | | | | | | | | | | | | | | | | |

Note: The reverse side of this sheet lists reference methods utilized



1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

| Client: The Dalton Foundries | Sample Description |
|------------------------------|------------------------|
| ATTN: J. R. Canan | EIS Analysis No.: 780F |
| Date Sampled: 2-28-86 | North Settling Tank |
| | |
| Date Received: 3-3-86 | #153 |
| Date Forwarded: 4-29-86 | |
| Purchase Order: 122 229 | |
| | |

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| EP Toxicity - Metals | X | State of Indiana Leaching Method X | |
|------------------------|-------------|------------------------------------|--|
| EP Toxicity - Organics | | Volatile Organic Compounds | |
| Ignitability | | Semi-volatile Organic Compounds | |
| Corrosivity | | (Base/Neutrals Acid Fraction) | |
| Reactivity | | PCB Pesticides | |
| Additional | | | |

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate lata transfer errors.